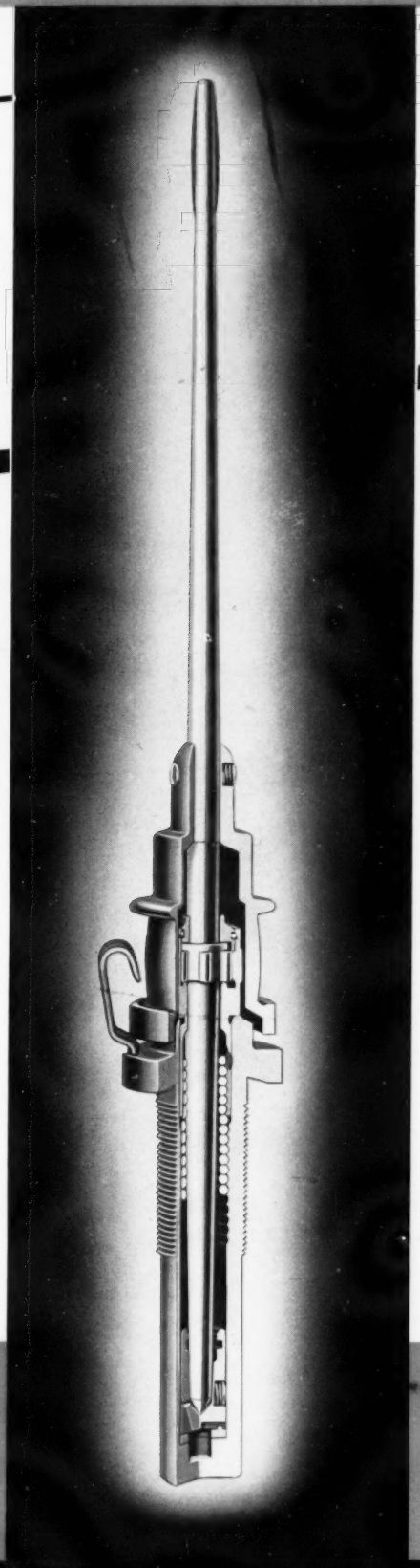
COTTON

JUNE, SERVING THE 1939

Textile Industries



This Amazing New Spindle will give you

- ✓ FASTER PRODUCTION
- ✓ LOWER COSTS
- ✓ LESS VIBRATION
- ✓ BETTER RESULTS

MARQUETTE NOVIBRA

HIGH-SPEED ROLLER-BEARING SPINDLE

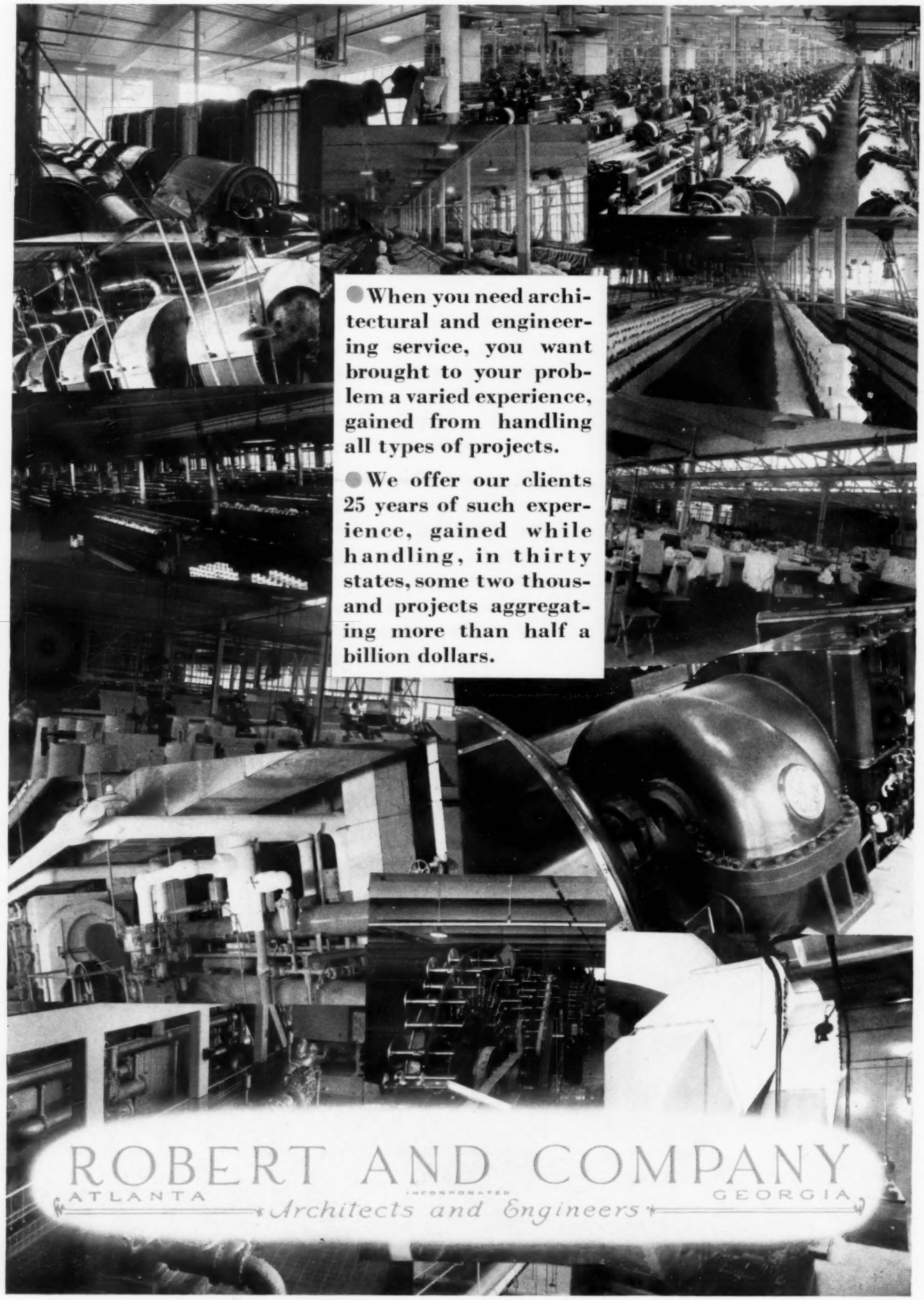
At last . . . a precision-built roller bearing spindle that satisfactorily meets today's demands for higher speed and less vibration. It will help you increase your output, reduce power consumption and produce better yarn.

THE MARQUETTE NOVIBRA spindle is American-made by The Marquette Metal Products Co., specialists in precision machinery and parts for the textile, aircraft, automotive and refrigeration industries. It has been thoroughly tested under actual operating conditions, and will live up to every claim we make for it.

MARQUETTE NOVIBRA TEXTILE SPINDLES MADE IN U.S.A. PATENTED TRADE MARK

THE MARQUETTE METAL PRODUCTS CO.

1170 GALEWOOD DRIVE CLEVELAND, OHIO


When you need architectural and engineering service, you want brought to your problem a varied experience, gained from handling all types of projects.
We offer our clients 25 years of such experience, gained while handling, in thirty states, some two thousand projects aggregating more than half a billion dollars.
ROBERT AND COMPANY
ATLANTA
INCORPORATED
GEORGIA
Architects and Engineers

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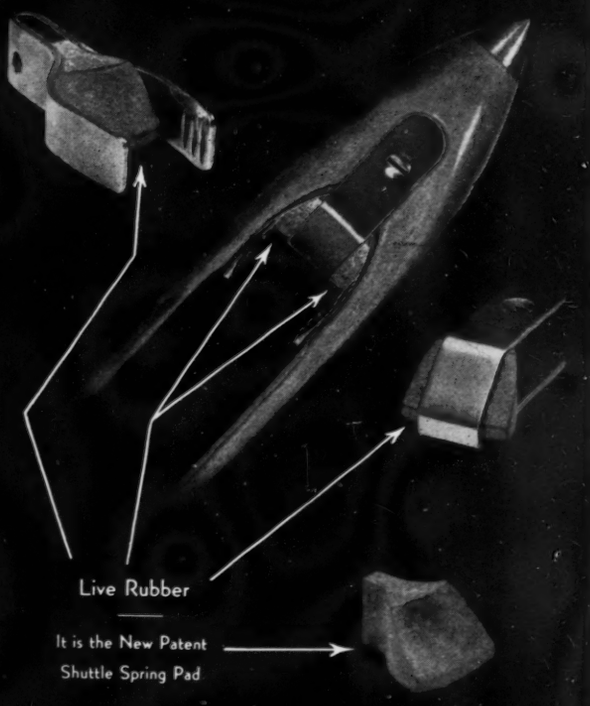
(Address all communications to COTTON, Grant Bldg., Atlanta, Ga.)

Let Your Bobbins Ride on Rubber

You Know What Rubber Pads Did for the Engine in Your Motor Car

We Now Build Draper Shuttles with

A New Patent Rubber Pad For the Shuttle Spring



It Cushions the Transfer
It Keeps the Bobbin Pointing True
Not Up or Down or to One Side
and Holds the Bobbin Firmly Without Vibration

It Will Work Wonders in Your Weaving

Because

Shuttle Spring Breakage is Almost Eliminated
Wear on Notches in the Spring is Greatly Reduced
The Annual Cost of Shuttles and Shuttle Parts is Less
Bobbins Do Not Get Out-of-Line in the Shuttle

And You Get

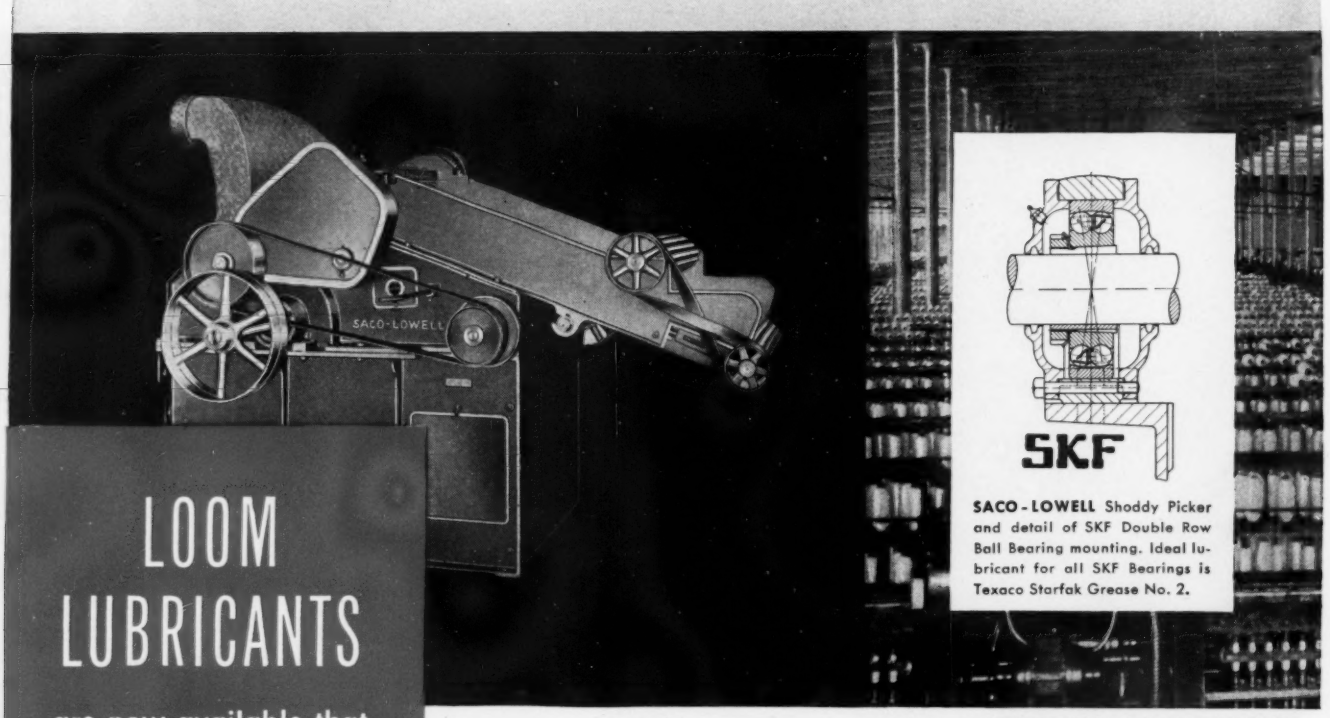
Better Cloth because the Filling Weaves-off Better

You Get This New Patent Pad
ONLY in Draper Shuttles

Draper Corporation
Atlanta Hopedale Spartanburg

LOWER TORQUE

THROUGHOUT THE MILL



SACO-LOWELL Shoddy Picker and detail of SKF Double Row Ball Bearing mounting. Ideal lubricant for all SKF Bearings is Texaco Starfak Grease No. 2.

CROSS-SECTION COURTESY SKF INDUSTRIES, INC.

LOOM LUBRICANTS

are now available that resist spattering and dripping from bearings.

ASK ABOUT THE NEW

TEXACO STAZON LUBRICANTS FOR LOOMS

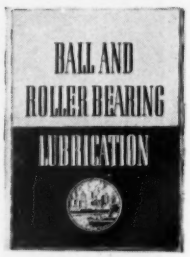
THE MORE anti-friction bearings there are in a mill, the more power can be saved by using lubricant made especially for these bearings.

Here's a lubricant that definitely reduces starting and running torque . . . Texaco Starfak Grease No. 2.

Texaco Starfak resists oxidation, separation, gum formation. Engineers, experienced in selecting and applying Texaco textile mill lubricants, will be glad to demonstrate that savings can be made through Texaco Perfected Lubrication.

For prompt engineering service and deliveries, phone the nearest of our 2229 warehouses, or write:

The Texas Company, 135 E. 42nd Street, New York.



Texaco's new 44-page booklet covering the construction, installation, lubrication of anti-friction bearings. Mailed on request.

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9 E.D.T., 8 E.S.T., 8 C.D.T., 7 C.S.T., 6 M.S.T., 5 P.S.T.

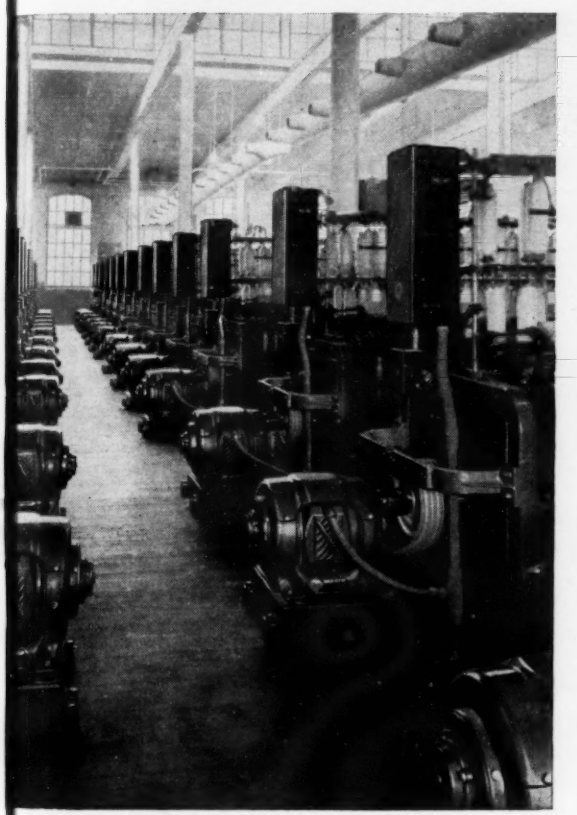
TEXACO

TEXACO STARFAK GREASE

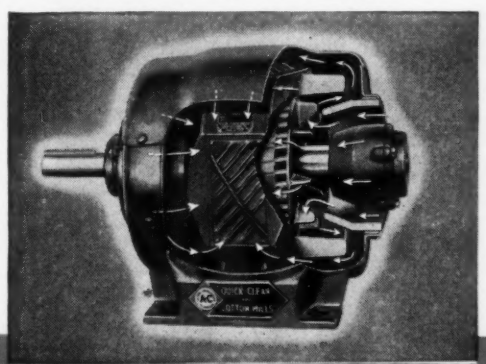
PERFECTED LUBRICATION FOR HIGH-SPEED BALL AND ROLLER BEARINGS

Lint Goes in AND OUT THROUGH BIG AIR PASSAGES!

Money Saving Facts On Quick-Clean Motors



IN THIS LARGE SOUTHERN TEXtile Mill, Allis-Chalmers Quick-Clean Motors remove the risk of shutdowns due to clogged motors . . . completely beat lint and fly conditions that stop ordinary motors.



HERE'S THE QUICK-CLEAN PRINciple! Dust laden air drawn into the motor is ejected at sides. Roomy unobstructed passages and glass-like surfaces make it impossible for lint and dust to adhere!

Quick-Clean Motors are Tailor-Made for the Textile Industry! Find Out About the Savings They Can Bring You . . . How They Beat Lint . . . Stop Shutdowns . . . Halt Power Leaks!

Here's the answer to shutdown troubles in your mill — a textile motor that *can't be stopped* by the heaviest dust, lint, or fly conditions!

That's what you want in a textile motor. And that's the kind of service you get with the Allis-Chalmers Quick-Clean Motor — a special motor for a special job . . . tailor-made to fit the toughest textile operating conditions!

Better Job with Quick-Clean!

And because it does a better job . . . and saves money while doing it — that's why textile operators everywhere are switching to Allis-Chalmers Lo-Maintenance Quick-Clean Motors to beat lint . . . eliminate motor shutdowns . . . protect production schedules . . . reduce power costs!

For when you equip your mill with Quick-Clean Motors, you get motors that deliver more than just a rated horsepower. You get exclusive quick-cleaning features — large, open, unobstructed air passages . . . hard, glass-smooth surfaces . . . dust-sealed working parts!

Get Quick-Clean Savings!

On top of this, there's an indestructible rotor . . . high carbon steel frame . . . distortionless stator . . . husky, full measure construction! Add all these features together — and that's your answer to long-life performance without running up costly repair bills.

It's easy to get the complete story on Quick-Clean Motors — how they are designed expressly for textile use . . . how they are made . . . what savings they bring you. Call the district office near you. Or write direct to Allis-Chalmers for full details.

1106

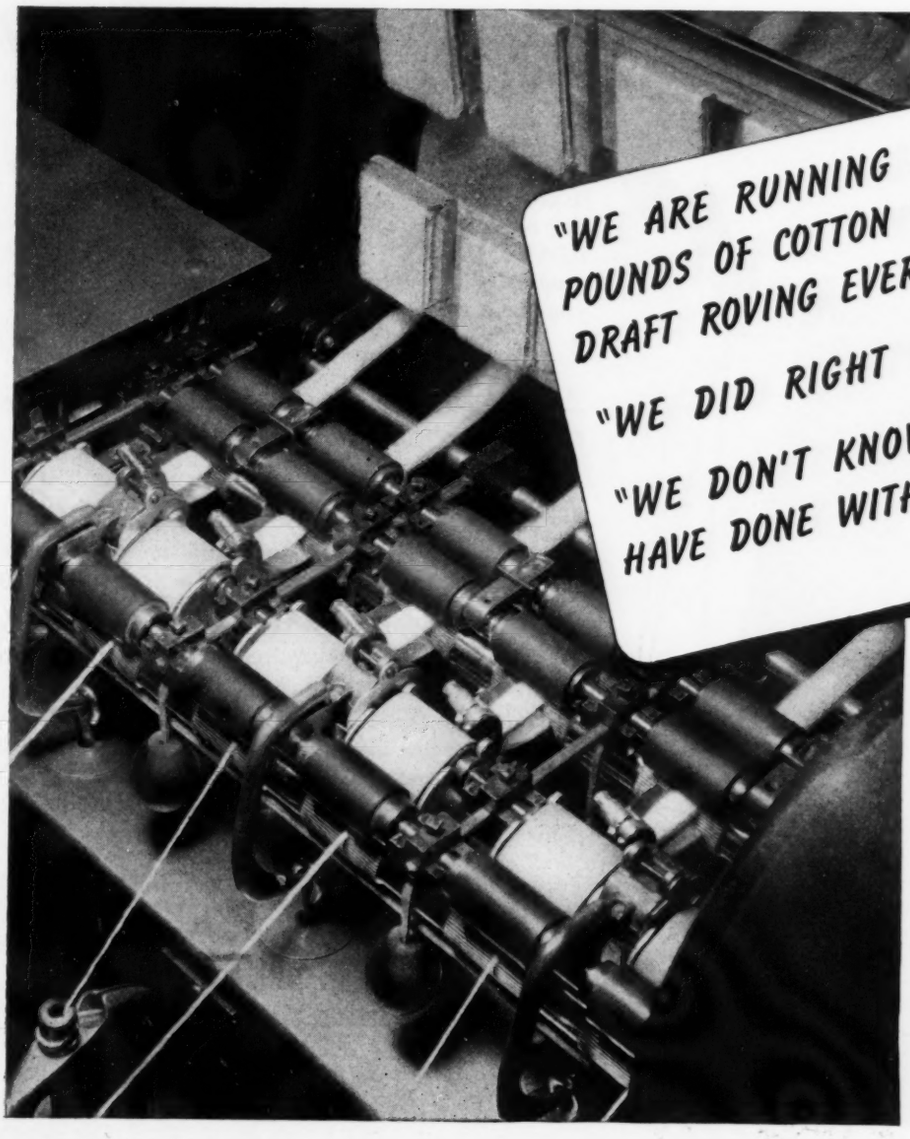
ELECTRICAL DIVISION
ALLIS-CHALMERS
MILWAUKEE·WISCONSIN

BECCO

ELECTROLYTIC HYDROGEN PEROXIDE

BECCO is outstandingly dependable—in uniformity and permanency of results—in constancy of service. This means much today in the bleaching of wools, silks, cottons, rayons and specialties. What's more, Becco is safe to use, safe to handle. Better call in capable Becco Technical Service for practical, confidential suggestions on the application of Becco Hydrogen Peroxide to your plant. No obligation! Write: Becco Sales Corporation, Buffalo, N. Y.; Boston, New York City, Philadelphia, Chicago and Charlotte.

PLUS BECCO TECHNICAL SERVICE



"WE ARE RUNNING SIXTY THOUSAND POUNDS OF COTTON THRU OUR SUPER-DRAFT ROVING EVERY DAY.

"WE DID RIGHT IN PUTTING IT IN.

"WE DON'T KNOW WHAT WE WOULD HAVE DONE WITHOUT IT."

(MILL AGENT)*

***P. S.**

He was thinking of the reduction in the cost for producing his roving.

THE only single process roving frame that will satisfactorily control mixed fibres. It produces a more even roving than any other system, and can be run on higher drafts.

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

What are the Benefits offered by a—?

WHETHER you have it down on paper or carry it around in your head, it's a good idea for anyone operating a sewing room to have a SEWING ROOM MODERNIZATION PLAN. Here are some of the things that become clear to you when you have the right kind of a plan:

1. How to make modernization pay for itself.

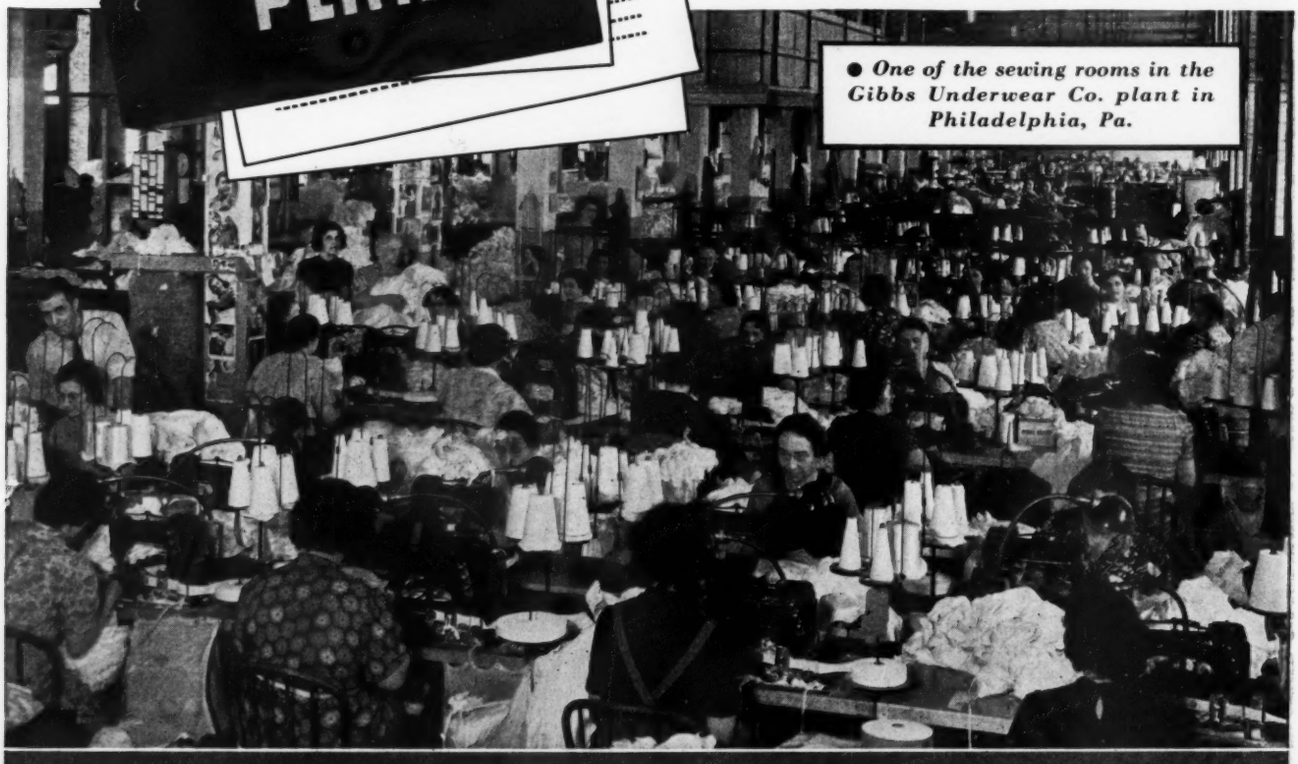
2. How plants with limited capital can complete modernization programs in shortest length of time.

3. How to get the maximum benefit out of partial modernization.

4. How to put your plant in the most favorable position to meet both increases and decreases in production.

5. How to judge new equipment on a basis of how much it can earn for you.

Your local Union Special representative has had a lot of experience advising manufacturers interested in preparing sound plans. *Call him in, or write.* UNION SPECIAL MACHINE CO., 438 N. Franklin St., Chicago, Illinois.



● *One of the sewing rooms in the Gibbs Underwear Co. plant in Philadelphia, Pa.*

UNION SPECIAL

WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF INDUSTRIAL SEWING MACHINES

A SERVICE that finds its chief purpose the ***profitable*** turnover of merchandise . . . ***that*** is "Constructive Factoring" . . . of which we will be only too glad to tell you more.

MILL FACTORS CORPORATION

354 Fourth Avenue, New York City

new

Lint Free Motor

THE CLEANEST RUNNING TEXTILE MOTOR YET DEVELOPED

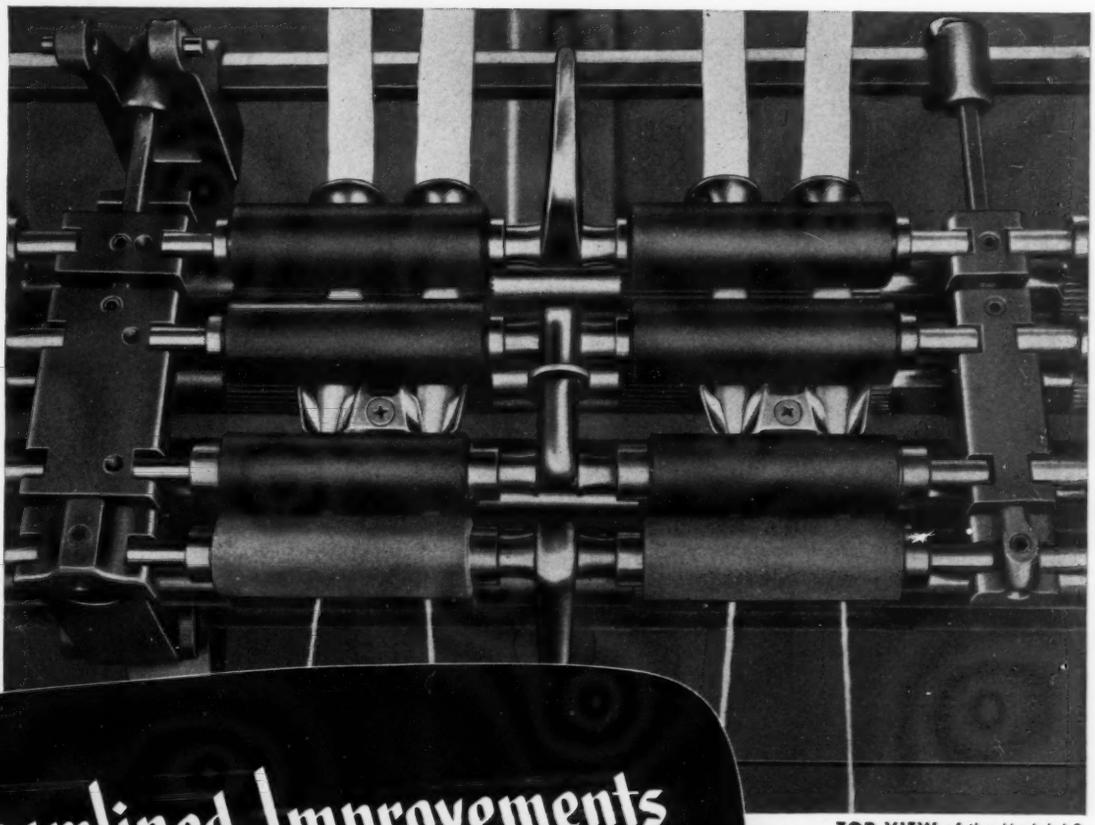
MOTOR CARE REDUCED BY THESE ADVANTAGES

- Unobstructed Air Path
- Smooth, Polished Windings
- Permanently Sealed Bearings
- Streamlined Air Passages
- No Oiling Required
- Easier Cleaning

J-20858

W WESTINGHOUSE ELECTRIC

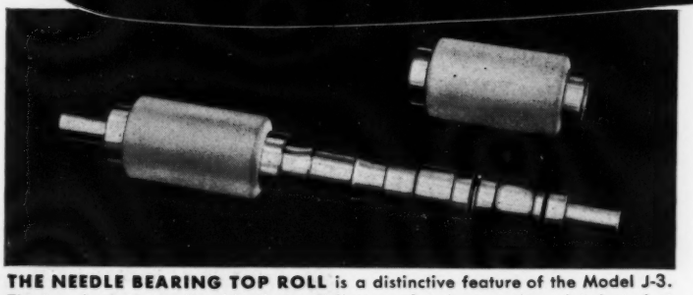
Westinghouse Lint-Free Motors



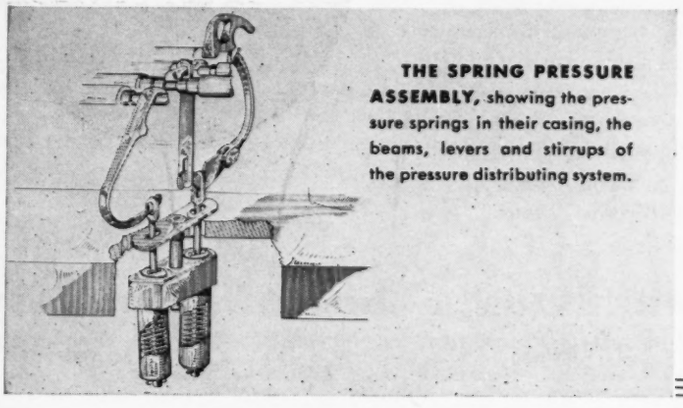
TOP VIEW of the Model J-3 Controlled Draft Roving Assembly. Note how the Forming Trumpet gathers the wide ribbon of fibres, and transforms it into a uniform compact tubular shape just before it reaches the final drafting zone.

Streamlined Improvements the new Model J-3

CONTROLLED DRAFT ROVING ASSEMBLY



THE NEEDLE BEARING TOP ROLL is a distinctive feature of the Model J-3. The bearings are enclosed in dust and lint proof casings, and are lubricated at long intervals with a rust-inhibiting grease. With this top roll, there is a smooth, uniform motion and effective fibre control even with heavy grists of cotton.



THE SPRING PRESSURE ASSEMBLY, showing the pressure springs in their casing, the beams, levers and stirrups of the pressure distributing system.

THIS NEW SACO-LOWELL Controlled Draft Roving Assembly was designed to accomplish three important objectives:

1 **IMPROVING** the fibre control function of the Forming Trumpet.

2 **DEVISING** a source of roll pressure which would be efficiently uniform in action, entirely trouble-proof in maintenance, and quickly adaptable to changes in operating conditions.

3 **ARRANGING** the entire drafting assembly in order to reduce the necessity of frequent cleaning and to facilitate this work when it becomes necessary.

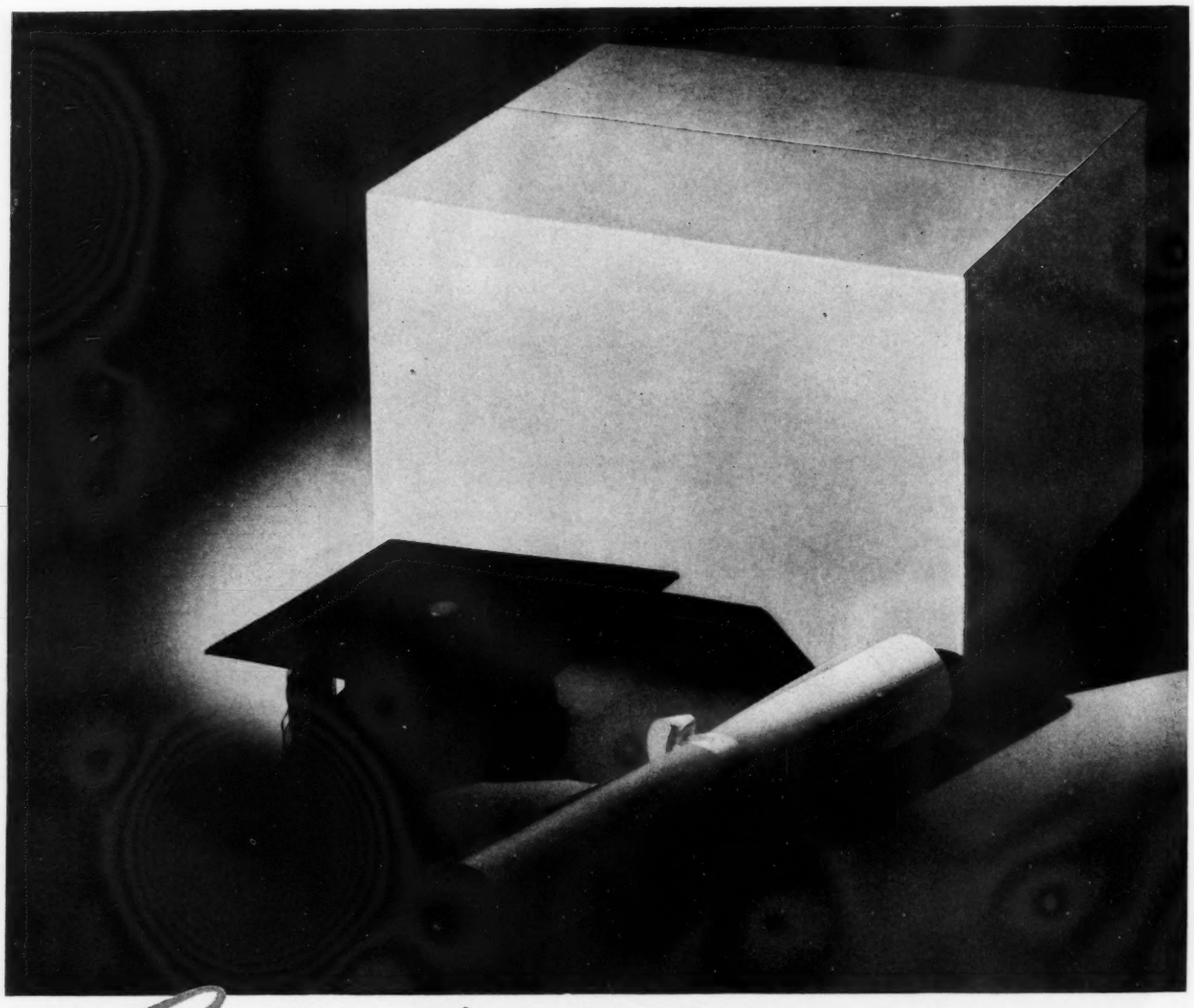
THE RESULT:—Even-Roving, economically produced through efficient fibre control—spic-an'-span cleanliness and thorough lubrication.

BETTER ROVING AT A SAVING should interest every mill. Our engineers will show you how easily this can be accomplished with the Model J-3 frame.

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Mass.

Charlotte, N. C. Atlanta, Ga. Greenville, S. C.



Graduate of the
SCHOOL OF HARD KNOCKS

You can expect greater shipping safety for your products and greater assurance of customer satisfaction with Gaylord corrugated or solid fibre boxes. One reason lies in the large room at the Gaylord laboratories which is often called the School of Hard Knocks.

Here, with the aid of an odd assortment of "torture" devices, Gaylord master designers put their creations through every bounce and jounce, every twist and strain a loaded shipping box could ever receive. A School of Hard Knocks, indeed!

But this practical Gaylord method assures you of two mighty important things. (1) A shipping box that "can take it." (2) Packing that will deliver your product satisfactorily despite "hard knocks" along the way. The Gaylord "Extra Margin of Safety," thus created for every Gaylord Box, has brought reductions in damage claims, increased goodwill and provided strong selling arguments for hundreds of companies in a wide variety of fields.

Let us study your particular shipping needs and provide you with a Gaylord design, graduated from this School of Hard Knocks to give you new opportunities for increased profits. Phone or write us today. No obligation.

Gaylord Boxes

CORRUGATED AND SOLID FIBRE

Also Gaylord Folding Cartons... Grocery Bags and Sacks... Kraft and Specialties

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

There's a Gaylord plant or sales office in your territory

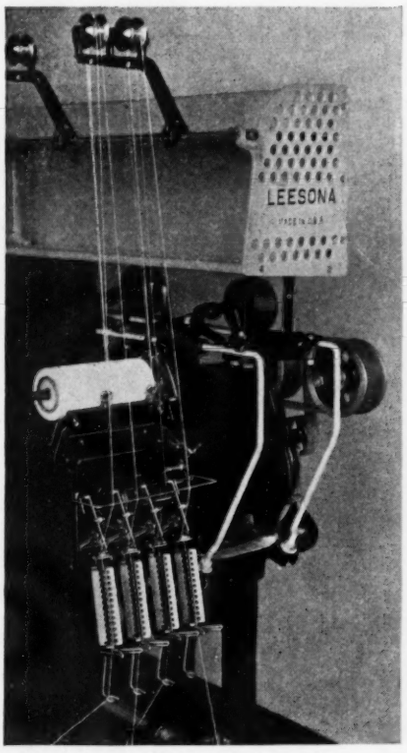
THIS IS NO. 15 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

COVERED RUBBER YARNS (No. 50 Winder)

In recent months a large number of mills have asked for our recommendations concerning both the preparation of yarn for covering rubber and the winding of the covered rubber thread onto packages for knitting, braiding or weaving.



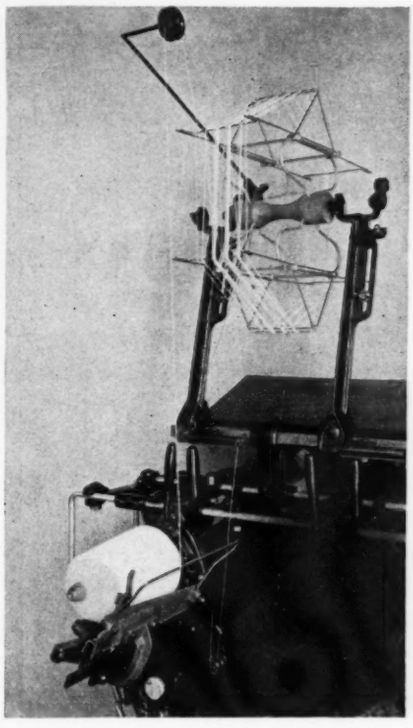
No. 50 Winder equipped to wind two tubes of yarn per spindle, two ends per tube, winding from cone supply.

The cotton yarn to be prepared for covering rubber is wound from cones on large-diameter paper tubes having an inside diameter of 1⅞". A cam with a 2½" or 3" traverse makes it possible to wind two tubes on each spindle. Each tube can also take two ends of yarn. The illustration above shows the No. 50 Winder equipped for winding two 3"-traverse tubes per spindle, with two ends on each tube, winding from a cone supply. Note the double thread roll overhead to separate the ends. When winding only one end onto each package, the yarn goes directly to the thread guide and overhead rolls are not necessary

We recommend this equipment for this work because it has an individual stop motion for each end, an individual tension and also better control of tension due to the differential tension mechanism.

The spindle is usually operated at 1000 R.P.M. which will give an average yarn take-up speed of about 230 y.p.m. for each end. When winding one end of 50/1 to each package or two ends of 100/1 to each package, the production in 40 hours will be about 20 pounds per spindle when two packages are wound at once.

The full tubes, 3½" in diameter and containing about 5 ounces of yarn, are taken to the rubber covering machine where two tubes, revolving in opposite directions, wind two layers of yarn around one strand of rubber. The covered rubber thread is taken up in skein form on a swift.



No. 50 Winder winding tapered-end cones of covered rubber yarn.

The photograph above shows the No. 50 machine winding covered rubber thread from a skein to a tapered-end cone. A lightweight metal swift is used which is adjusted to fit the skein with just enough tension to prevent the skein from sagging. The thread passes over the compensator roll, under a high wire bail and through a special slotted thread guide. Satisfactory cones can be wound with a very small amount of stretch and are suitable for knitting without rewinding.

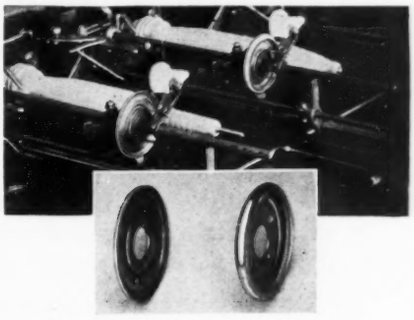
For winding tapered-end cones of covered rubber thread, the No. 50 Winder is run with a spindle speed of about 500 R.P.M. Two skeins are wound onto each cone which will hold about 8 ounces of thread when wound with a 5"-traverse cam.

To supply one cone winder with covered, rubber thread, the covering machine will require yarn from three tubing machines, winding two tubes per spindle.

BALLOON-TYPE TRAVERSE WHEEL (No. 90 Winder)

A new Balloon-Type Traverse Wheel has been developed for winding rayon on the No. 90 Winder. Its rim is rolled over, greatly increasing its strength. The rim is wide and smooth, with a special finish for rayon yarns. The wheel itself is light in weight so its movement along the traverse bar is easily controlled. Solid metal wheels are heavy and have a tendency to overrun, which will produce bobbins with a ridgy surface

The new Balloon-Type Traverse Wheel is only made in sizes 3, 5, 7, 9, and 11. Many mills have changed over to the new wheel after making comparative tests, which is an indication that they are getting smoother and better bobbins for weaving. It further indicates that the life of the Balloon-Type Wheel makes it more attractive than softer wheels made of composition materials.



Old-style Traverse Wheel is at the left. Balloon-type Traverse Wheel is at the right.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

GARGOYLE VELOCITE OILS RES

BolsterYo

Gargoyle Velocite Oils form a strong, tissue-thin film that—

❶ Reduces Friction . . . and cuts down excessive power demand.

❷ Helps Prevent Wear with split-second distribution through smallest bolster clearances.

Gargoyle Velocite Oils not only help reduce maintenance expense, but in power saving alone they have often repaid many times their cost!

THE SOCONY-VACUUM man offers you a complete line of lubricants, plus these *exclusives:*

The right lubricant for every machine . . . and new lubricants ahead of new needs . . . developed by world-famous research laboratories through close cooperation with machine builders.

73 years' experience—thousands of case histories—to guide in prescribing the right use of these lubricants to gain Lubrication Profits for you.

World-wide distribution and guaranteed uniformity—the same quality available everywhere.

IST BOLSTER FRICTION...HELP

ur Profits!

Another Tough Job for
OIL FILM
Successful operation of every machine depends upon the qualities of a *microscopic coating of oil* which prevents metal-to-metal contact.

SOCONY-VACUUM

Industrial Service and Lubricants Help to Lower Costs by

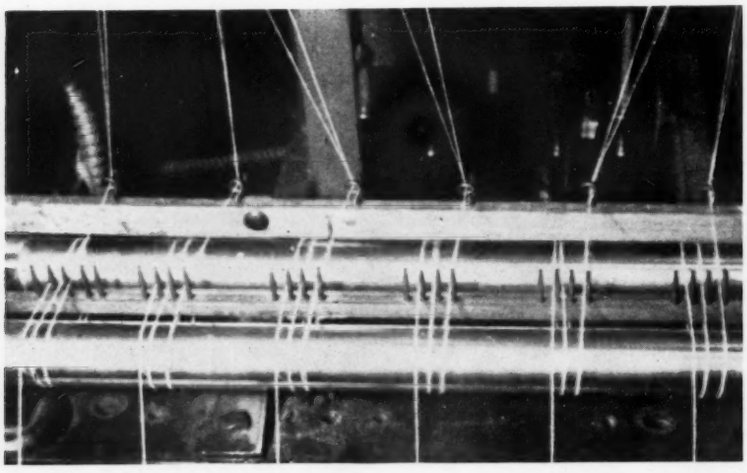
Correct Lubrication

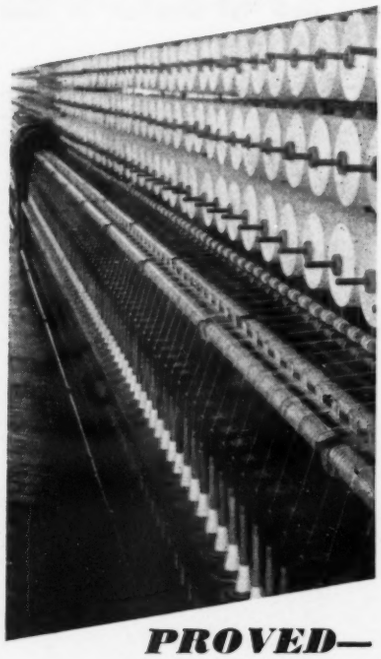
GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC.

Standard Oil of New York Division · White Star Division
Lubrite Division · Magnolia Petroleum Company
Chicago Division · White Eagle Division · Wadhams Division
General Petroleum Corporation of California

BACHMAN GUIDES *Save Money*





PROVED—
By Performance

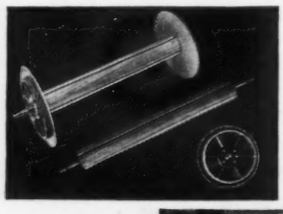
Eliminate "Blow-outs" - Increase Twister Speed

Invest In BACHMAN GUIDES !

The Bachman Guide is a patented device that eliminates the heavy top rolls on twisters. Its accomplishments are many. The saving in power alone makes it a worthwhile investment. "Blow Outs" and the resulting waste are reduced about ninety per cent. An increase of ten per cent in twister speed is possible without interfering with the quality of yarn or increase in breakage of ends. Traveler life is greatly increased. The twisted yarn is smoother, fuller, rounder, stronger, and cleaner. These are established facts substantiated by many satisfied mill operators.

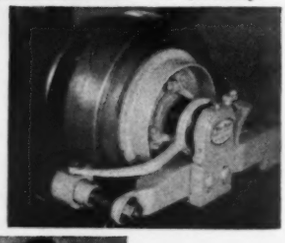
Also manufacturers of special textile machinery, cloth room machinery, and textile repair parts.

Other WEST POINT Products



LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.

ENERGY LOOM DRIVE . . . makes possible higher production per loom per hour . . . provides smoother loom operation.



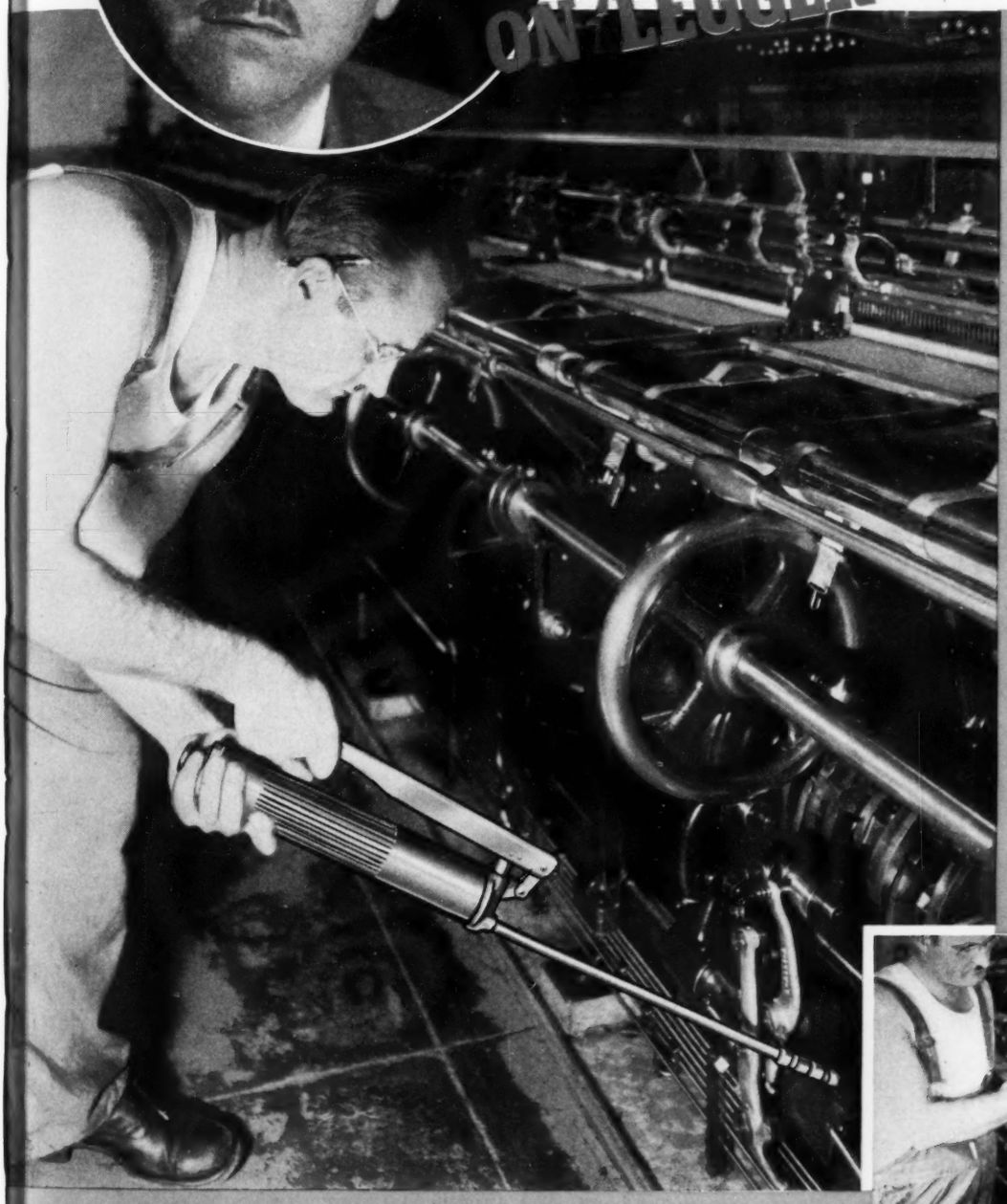
GEARS . . . Gears of all types —noted for their efficiency and durability.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

"...HAS SAVED US A WORLD OF TIME AND MONEY ON 'LEGGER' LUBRICATION!"



HEAD OF APEX HOSIERY COMPANY CITES MANY ADVANTAGES OF ALEMITE

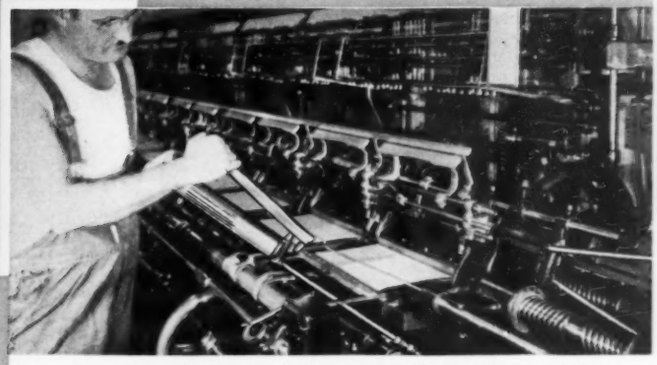
F. E. STRUVE, General Manager of the Apex Hosiery Company, Philadelphia, is one of hundreds of textile executives who think Alemite is "tops" for textile machinery lubrication.

"We formerly had to oil this 20-section 45-gauge Reading 'Legger' several times a day," says Mr. Struve, *"But with this Alemite Model 6639 Gat Gun with long extension and Alemite No. 38 Lubricant, once in three weeks is ample. Alemite has saved us a world of time and money."*

One of Alemite's biggest savings for the textile industry lies in its cleanliness. This modern method does away with contamination of materials and products *—a major problem in many mills.* And because Alemite Guns force lubricant under pressure *into* the bearings, there's no oil drippage on machines and floors to cause accidents and create fire hazards.

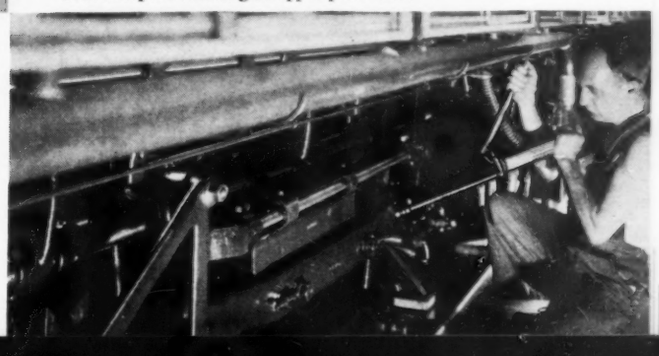
There is an Alemite System, power or manually operated, to fit your requirements exactly—*to help you save time and money,* avoid contamination, and keep your machines running in perfect order. Write to us!

The Alemite Gat Gun Model 6639 makes short work of lubricating the hand wheel shaft ball bearing on this Reading Full-Fashioned Hosiery Machine. Formerly required oiling several times daily; now gets Alemite No. 38 Lubricant once in 3 weeks.



Operator lubricating catch bar shaft on the Reading machine, using the Alemite Gat Gun and Alemite No. 28 Concentrated Oil.

The Coulier mechanism on the Reading machine bears the heaviest load of the entire operation—but Alemite No. 28 every 160 hours keeps it running in apple-pie order.



ALEMITE

REG. U. S. PAT. OFF.

WORLD'S LARGEST MANUFACTURER OF LUBRICATION PRODUCTS

A Division of Stewart-Warner Corporation, 1884 Diversey Parkway, Chicago, Ill.
Stewart-Warner-Alemite Corporation of Canada, Ltd., Belleville, Ontario

THIS GUARANTEE ASSURES YOU
100% PURE OLIVE OIL SOAP
OF THE FINEST QUALITY!
GUARANTEE
Our ARCTIC Brand of OLIVE OIL SOAP is hereby guaranteed to contain no fillers, artificial coloring matter, greases or adulterants. It is manufactured exclusively from Olive Oil, and carefully processed to insure an absolute uniform quality.
COLGATE-PALMOLIVE-PEET CO.
Note the word "exclusively"
ARCTIC
OLIVE OIL SOAP

HOW ARCTIC OLIVE OIL SOAP HELPS CUT PROCESSING COSTS

YOU will find Arctic Olive Oil Soap truly exceptional in purity and quality. Made *exclusively* with olive oil, it is unconditionally guaranteed by America's largest importers of olive oil to be one of the finest green olive oil soaps obtainable.

Because of its low titre, its mildness and ready solubility, Arctic Olive Oil Soap is unsurpassed for any washing operation requiring neutral soap. We particularly recommend it in the following:

SILK (1) Soaking. (2) Degumming. (3) Dyeing. (4) Washing after dyeing.

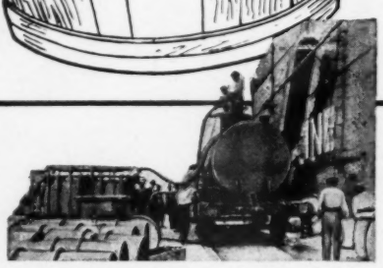
WOOL (1) Scouring, raw and piece goods. (2) Scouring, skein. (3) Washing after dyeing.

RAYON (1) Scouring before dyeing. (2) Dyeing. (3) Washing after dyeing.

You will find Arctic Olive Oil Soap *especially* satisfactory for use in processing all rayons. It protects the strength of the fabric and imparts a better handle. Because it contains no free caustic alkali, it does not saponify acetate yarns.

Why not take advantage of its many exceptional qualities to reduce reprocessing on your silk, wool and rayon output and get a higher percentage of goods that sell at top prices? It will cost you no more to do so. Because of the huge quantities in which we import olive oil, this *guaranteed* soap costs no more than many ordinary soaps!

Arctic Olive Oil Soap is manufactured in bars or flakes. Your C.P.P. representative will give you prices and samples. Or write direct to us.



BROUGHT DIRECT FROM PRODUCER TO YOU BY C. P. P.

In order to protect to the fullest the quality of raw materials that go into Arctic Olive Oil Soap, Colgate-Palmolive-Peet Company buys direct in many of the principal olive-growing regions of Europe.

Arctic OLIVE OIL SOAP

100% OLIVE OIL SOAP IN BARS OR FLAKES

A Product of COLGATE-PALMOLIVE-PEET CO. • Jersey City, N. J.

THE ODDS ARE WITH YOU,

WHEN YOU BUY *Franklin Process*

YARNS OR YARN DYEING

In 1938 the total production of the 4 Franklin Process plants was about 20,000,000 lbs., by far the greatest in their history. What better assurance can you have that the odds are in YOUR favor when you place your yarn and yarn dyeing business with this company? If we were not thoroughly capable of satisfying your requirements, as to quality, delivery and range of service, we would not today be the largest organization of our kind in the world.

Large stocks of cotton yarn, carded or combed (spun rayon to order); any quantity from 1 to 2500 lbs. dyed in one lot; any type of color; any put-up commonly used;—these are the highlights of Franklin Process Service. Why not give them an opportunity to work for YOU?

Telephone or write to our nearest office and ask for our circular "The PLUSES in Franklin Process Yarn and Yarn Dyeing Service".

FRANKLIN PROCESS COMPANY

Natural Yarns, Colored Yarns, Glazed Yarns, Dyeing and Processing Machines

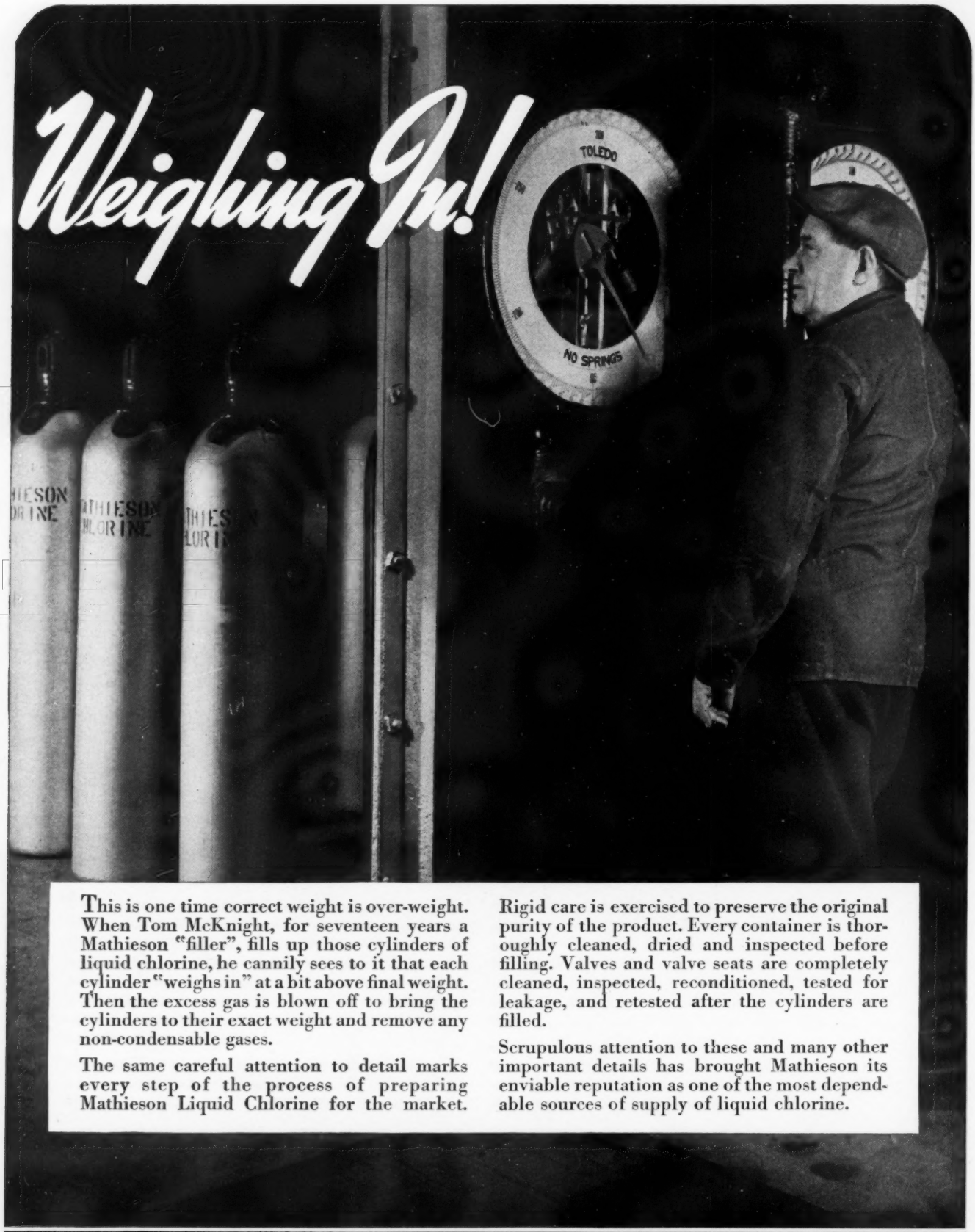
Providence, Philadelphia, Greenville, Chattanooga . New York Representative, 40 Worth Street. • Chicago Representative, 100 W. Monroe Street

ONE OF MANY TYPES OF FABRICS FOR WHICH WE PACKAGE DYE YARNS (Cotton or Spun Rayon)

Other types include dress goods, shirting, pajama, underwear, handkerchief, curtain, drapery, upholstery, terry, elastic and narrow fabrics, wire covering, braids, hosiery and other knit goods.

Franklin Process

★ **SPECIALISTS IN PACKAGE DYEING SINCE 1910**



This is one time correct weight is over-weight. When Tom McKnight, for seventeen years a Mathieson "filler", fills up those cylinders of liquid chlorine, he cannily sees to it that each cylinder "weighs in" at a bit above final weight. Then the excess gas is blown off to bring the cylinders to their exact weight and remove any non-condensable gases.

The same careful attention to detail marks every step of the process of preparing Mathieson Liquid Chlorine for the market. Rigid care is exercised to preserve the original purity of the product. Every container is thoroughly cleaned, dried and inspected before filling. Valves and valve seats are completely cleaned, inspected, reconditioned, tested for leakage, and retested after the cylinders are filled.

Scrupulous attention to these and many other important details has brought Mathieson its enviable reputation as one of the most dependable sources of supply of liquid chlorine.

Mathieson Chemicals

THE MATHIESON ALKALI WORKS (INC.)
60 E. 42ND STREET, NEW YORK, N. Y.

SODA ASH...CAUSTIC SODA...BICARBONATE OF SODA...LIQUID CHLORINE...BLEACHING POWDER...HTH PRODUCTS...AMMONIA, ANHYDROUS and AQUA...
FUSED ALKALI PRODUCTS...CCH (INDUSTRIAL HYPOCHLORITE)...DRY ICE...LIQUID CARBON DIOXIDE...ANALYTICAL SODIUM CHLORITE...GYPSUM PRODUCTS

ANOTHER SIGN OF GREATER INDUSTRIAL SAFETY

UNBRAKO

SELF-LOCKING
HOLLOW SET SCREWS
with the Knurled Points

PREVENT ACCIDENTS

and Machinery Breakdowns
caused by ordinary set-screws working loose

Fig. 1645
Pat. Applied For

Accidents do cost you money . . . and knock the spots out of production schedules as well. So, why risk the trouble that can be caused by ordinary set screws working loose. Standardize on "Unbrako" Self-Lockers. You simply tighten them up in the normal way and the ingenious knurling around the cup points takes a grip that won't be broken loose by vibration, shaking or jarring. In other words, you set them up and forget them . . . BUT, they can be easily removed with an ordinary hex bar-wrench and re-used over and over again.

Write today for samples and complete details. Test them yourself . . . we know you'll be satisfied as are the many other users in all types of industry.

Also ask us about the Self-Locking Square Head Set Screw. It has the same advantages.

Fig. 1641
Pat. Applied For

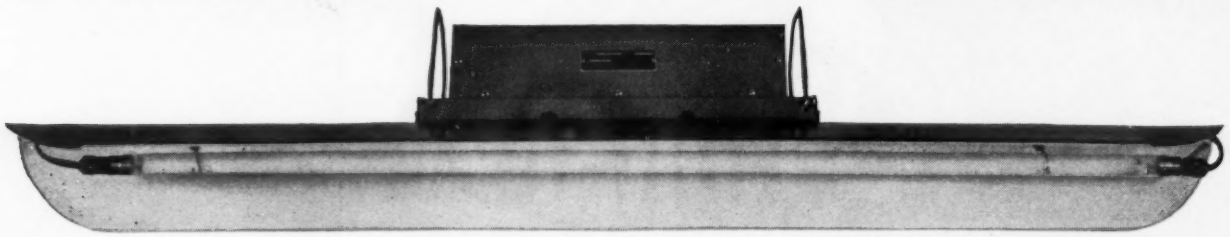
STANDARD PRESSED STEEL CO.

BRANCHES
BOSTON
DETROIT
INDIANAPOLIS

JENKINTOWN, PENNA.
BOX 582

BRANCHES
CHICAGO
ST. LOUIS
SAN FRANCISCO

TO MEET INDUSTRY'S DEMANDS FOR ECONOMICAL HIGH ILLUMINATION LEVELS... *the new* COOPER HEWITT



100-watt fluorescent lamp

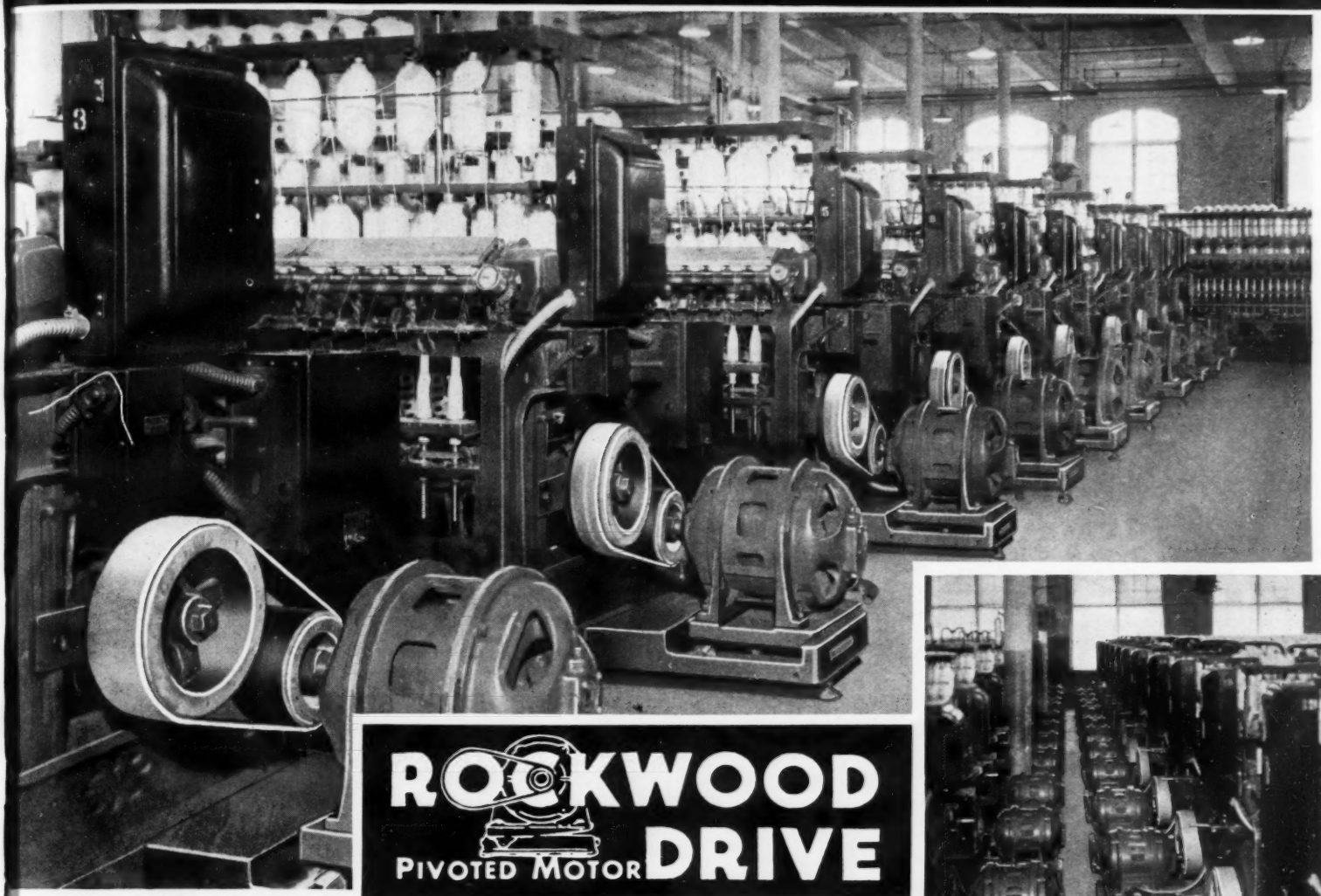
"Better Than Daylight" engineered with Cooper Hewitt Mercury Vapor Lamps—Cooper Hewitt Fluorescent Lamps

CONSUMING only 100 watts, this lamp has an output of 5,000 lumens—the greatest output of any lamp of equal wattage now on the market. It provides a cool blue-white light, blending well with daylight. Details are easily seen. It is psychologically cool and actually cool from a physical standpoint thus decreasing the air-conditioning load. » » » Industrial plants of every kind will find it the answer to better employee welfare and better production which inevitably follows when lighting levels are raised and engineered to produce non-fatiguing illumination. Write for a copy of the new bulletin describing Cooper Hewitt Fluorescent Lamps. General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.

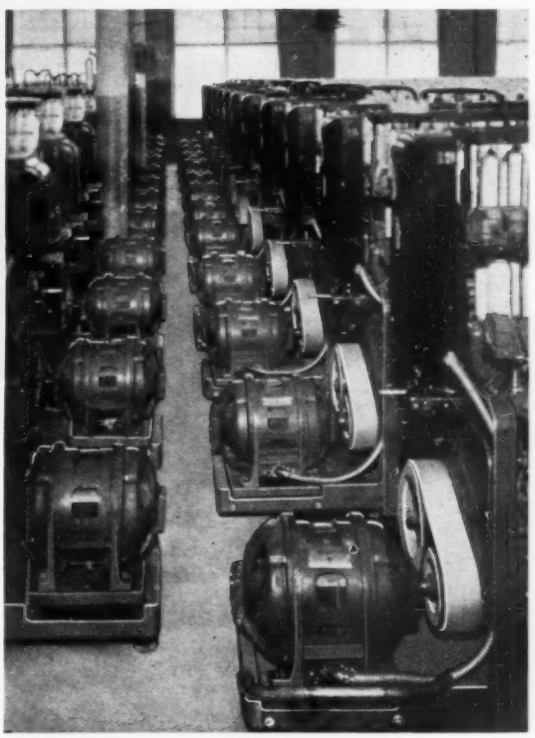
GENERAL ELECTRIC VAPOR LAMP COMPANY

936F

WARE SHOALS MFG. CO. CHOOSE Rockwood PIVOTED-MOTOR Drives

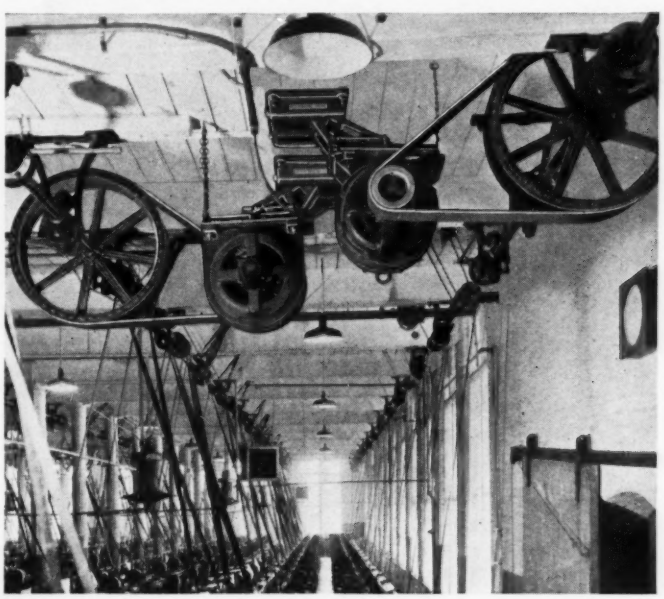


ROCKWOOD PIVOTED MOTOR DRIVE



When Ware Shoals modernized for more and better production

They, too, chose Rockwood Pivoted-Motor Drives—both for spinning frames and for lineshafts. Another of the great cotton mills of the South who use the dependable, money-saving, Rockwood Pivoted-Motor Drive to assist their operating people in getting more production and better production — with less maintenance and minimum power consumption.



Rockwood Drives use both the gravity weight of the motor and the reaction force of the motor to assure dependable belt tension—regardless of belt stretch or changes in the load. Belt elongation is taken up automatically and the belt tension changes with the load changes—increasing as the load increases—falling off as the load falls off. The life of the belts is often doubled. The driven spinning frames and lineshafts are maintained at a more uniform speed than the textile industry has ever before secured from belted drives.

Maintaining uniform driven speeds means more production—and better quality of production. YOU, TOO, CAN USE ROCKWOOD PIVOTED-MOTOR DRIVES TO IMPROVE THE PERFORMANCE OF YOUR MACHINERY AND REDUCE YOUR COSTS. CAN WE GIVE YOU SUGGESTIONS? A Rockwood engineer will be glad to get in touch with you if you will write.

The pictures above show Rockwood Drives for spinning frames. Picture to the left shows two of the many Rockwood Ceiling Drives for lineshafts. Rockwood lineshaft drives are easy to install and simple to understand —maintenance is reduced to a new minimum.

ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, IND.

Every Bleachery has its own Problems

That's why du Pont offers 3 PEROXIDES *for* TEXTILE BLEACHING

There wouldn't be any need for more than one of them if the bleaching superintendents didn't have the problem of efficient production, the right kind of bleach, reasonable costs and many other things which enter into so-called "routine" bleaching. Routine? Hardly - when the equipment in place must be used to bleach a wide variety of goods to the wanted requirements. And what about lowering the cost and improving the bleach? Every forward-looking superintendent has his eyes open to those possibilities. Three different peroxides to pick from gives him a better opportunity to pick the right bleach for the work. And he knows he can always count on the experienced du Pont Technical Service for information and help in making his selection and for assistance in his bleaching problems. It's a Service where Service is needed.

E. I. DU PONT DE NEMOURS & COMPANY, INC.
The R. & H. Chemicals Department
Wilmington, Delaware

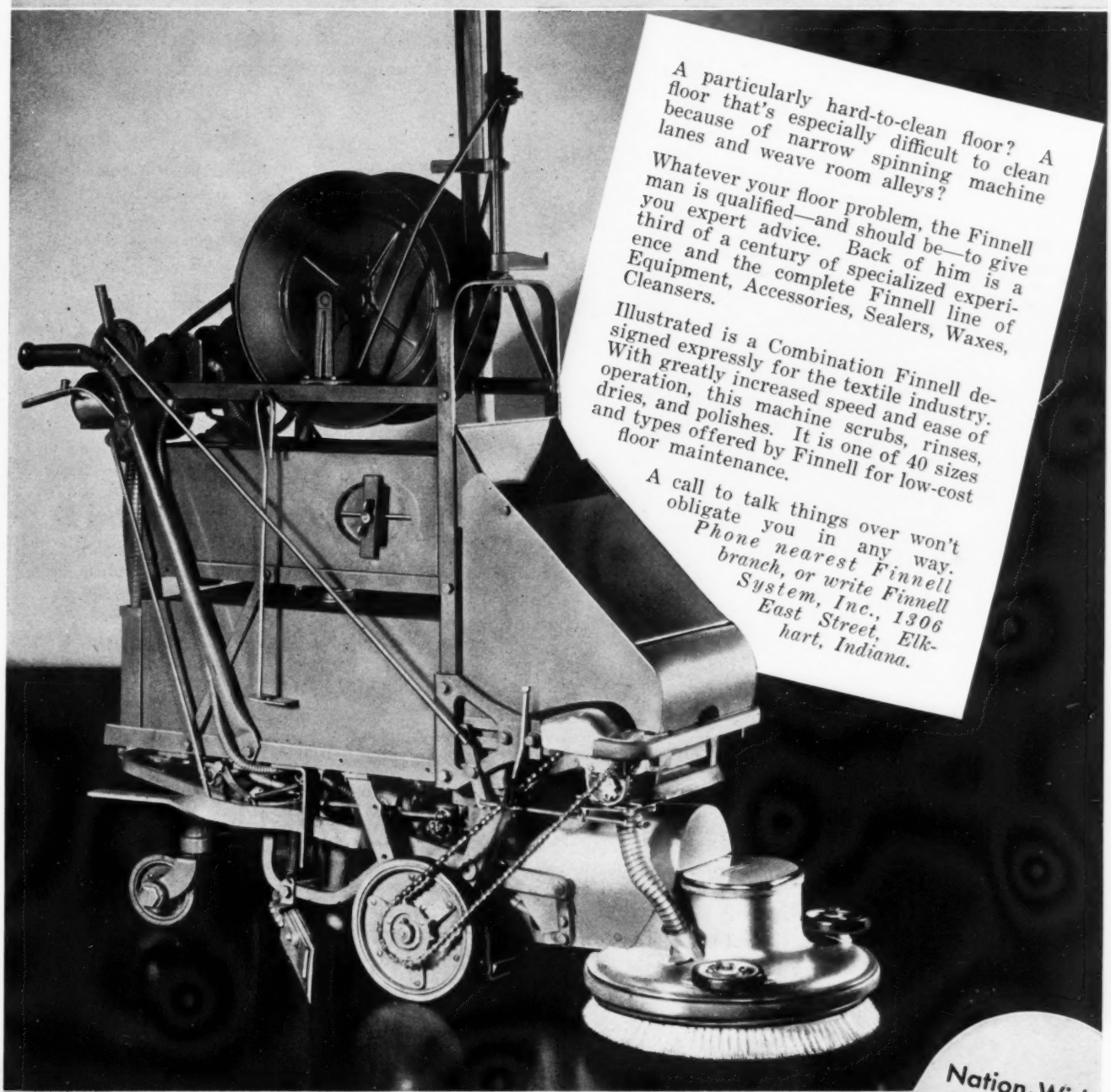
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Plan to visit the du Pont exhibits at the GOLDEN GATE INTERNATIONAL EXPOSITION in San Francisco—and at the NEW YORK WORLD'S FAIR

DU PONT

*Reg. U. S. Pat. Off.

Have You An UNUSUAL *Floor Problem?*



A particularly hard-to-clean floor? A floor that's especially difficult to clean because of narrow spinning machine lanes and weave room alleys?

Whatever your floor problem, the Finnell man is qualified—and should be—to give you expert advice. Back of him is a third of a century of specialized experience and the complete Finnell line of Equipment, Accessories, Sealers, Waxes, Cleansers.

Illustrated is a Combination Finnell designed expressly for the textile industry. With greatly increased speed and ease of operation, this machine scrubs, rinses, dries, and polishes. It is one of 40 sizes and types offered by Finnell for low-cost floor maintenance.

A call to talk things over won't obligate you in any way. *Phone nearest Finnell branch, or write Finnell System, Inc., 1306 East Street, Elkhart, Indiana.*

FINNELL SYSTEM INC.

Pioneers in FLOOR MAINTENANCE EQUIPMENT

Nation-Wide Staff of Finnell Engineers

This booklet is helping office executives meet THE HOURS PROBLEM

Executives concerned with conserving clerical hours are using this booklet to assist them in correcting situations such as these:

BOTTLENECKS

If any department or individual is obliged to be inactive when work "clogs" at some other point, the cause of the bottleneck should be discovered. A slight change in equipment or routine may insure a more even flow of work.

PEAK PERIODS

If sales, purchases, costs, and other figures are merely recorded from day to day, peaks arise when employees must rehandle the figures to write customers' statements, take a trial balance, analyze accounts, or complete statistical reports. Newer methods make it possible to iron out peaks by eliminating costly rehandling of figures.

UNNECESSARY DUPLICATIONS

Duplication of media or records in a separate operation takes time and creates the possibility of errors. If unproductive intermediate steps are required to fit the work to present machines or system, investigate "direct-to-final-results" methods.

NEEDLESS OPERATIONS

Studying the work at each desk may reveal how a few simple short-cuts would save thousands of needless operations on your figuring, accounting, form-writing, and statistical work.

• • •

The local Burroughs man will be glad to help you make a desk-to-desk survey. It will enable you to determine whether any of your employees are handicapped by operations that might be shortened or eliminated. Call him today, or write direct.

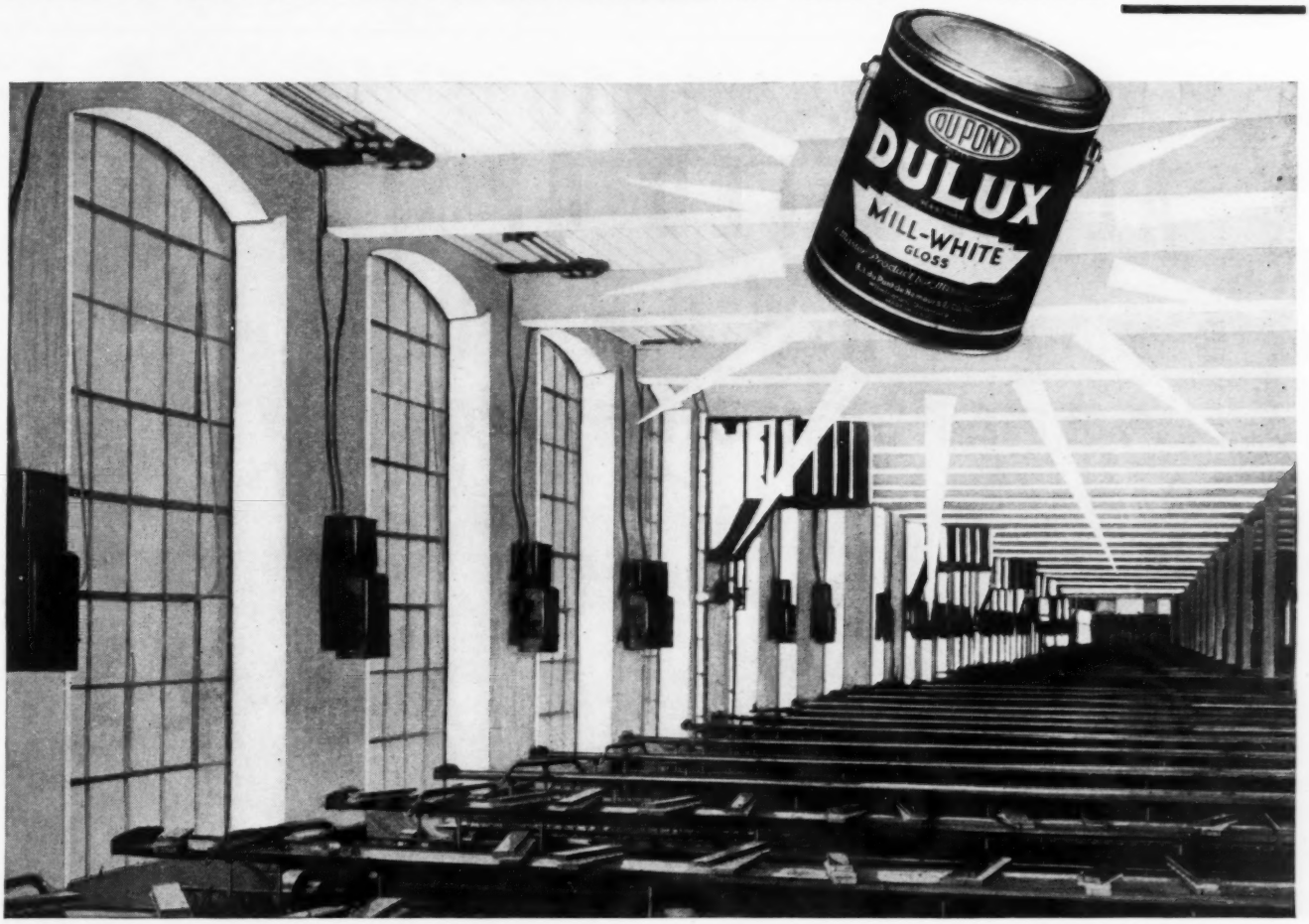
BURROUGHS ADDING MACHINE COMPANY
6826 Second Blvd., Detroit, Mich.

SEND FOR THIS BOOKLET!

For the executive concerned with the problem of conserving clerical hours, this new booklet contains many specific suggestions for readjusting office routine. Write today, on your own letterhead, for your free copy.

Burroughs

DULUX COSTS LESS–BECAUSE IT STAYS WHITE LONGER



It's the finish that gives

MORE YEARS TO THE GALLON

EVER SINCE its introduction, this *different* mill white has made sensational gains in popularity.

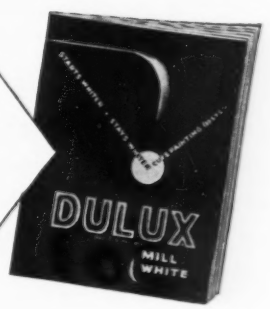
DULUX does a better job and it saves money. It *starts* whiter. It *stays* whiter. Its brilliantly white surface reflects more light. And because it keeps its initial whiteness far longer than ordinary mill whites, DULUX greatly lengthens out the time between repaintings.

Its amazing whiteness comes from the precise balance of its titanium pigments —the whitest pigments known to chemical science—and the DULUX vehicle. This vehicle gives such high resistance to chipping, cracking and yellowing that it is setting sensational new standards of durability and whiteness retention.

DULUX not only cuts paint overhead, but it usually *costs less to apply*. Its greater spread per gallon mean fewer gallons per coat. Its intense hiding frequently means fewer *coats*. *Both* qualities mean fewer gallons needed per job.

Do *you* know about DULUX? If not, we'll send you full information about this brilliantly white, overhead-cutting mill white. Just send in the coupon.

SEND FOR THIS FREE BOOK



DU PONT **DULUX**

The Mill White that Stays White

E. I. du Pont de Nemours & Co., Inc., Dept. C-69
Finishes Division, Wilmington, Delaware

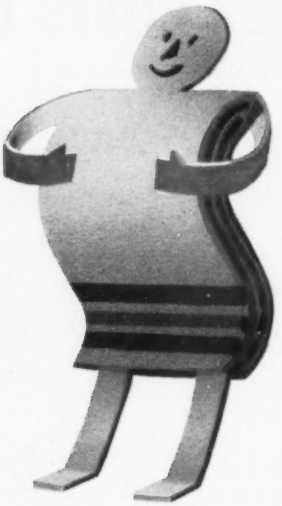
Please see that I get complete information about DULUX Mill White—and your new booklet.

Name .....

Address .....

City ..... State .....

MANY A BLANKET IS "ALL PUFFED UP" By ASHWORTH NAPPER CLOTHING



The photograph shows the napper room of a famous blanket manufacturer, who for many years has used Ashworth napper clothing. This product is widely used not only on blankets but on every type of napped fabric—cotton, wool, silk and rayon.

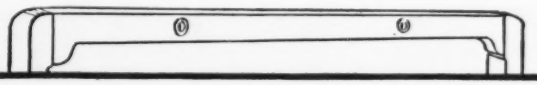
Why? Because Ashworth is a dependable service, offering an uninterrupted supply, prompt repairs and ready availability with—

3 FACTORIES
FALL RIVER, WORCESTER, PHILADELPHIA

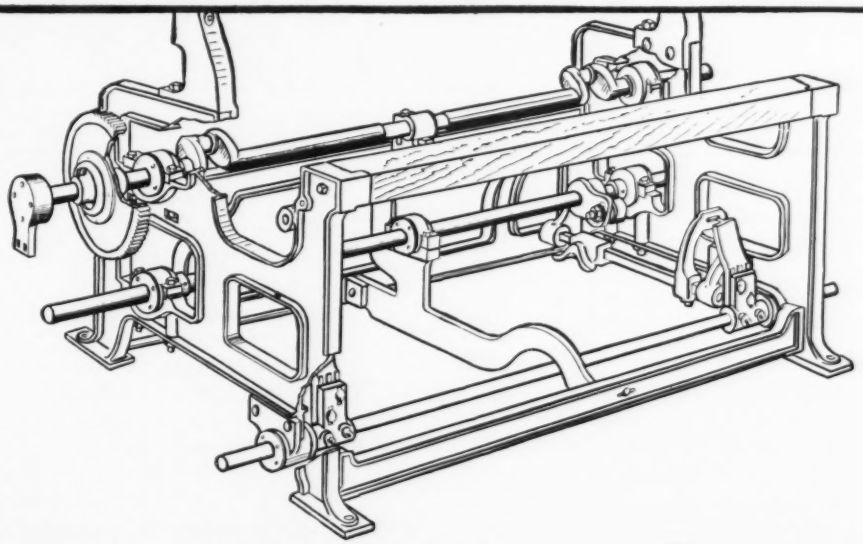
6 REPAIR SHOPS
FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS
FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.
Factories, Repair Shops and Distributing Points as above. Southwestern Representative: Textile Supply Co., Dallas, Texas.
★PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for All Types of Napping Machinery • • Brusher Clothing and Card Clothing for Special Purposes • • Lickerin Wire and Garnet Wire • • Sole Distributors for Platt's Metallic Wire • • Lickerins and Top Flats Re-clothed at All Plants.



FREE CONSULTATION SERVICE



. . . It is Yours for the Asking

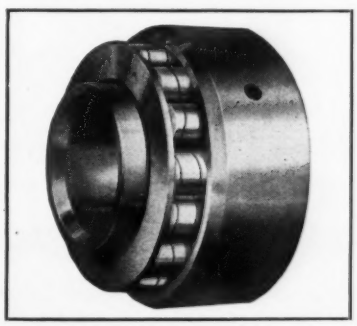
The purchase of new looms requires a sizeable capital investment. Capital investments are made with the sole idea of securing the highest possible return on the money invested. Therefore, some analytical thinking is done by someone before capital is invested in new machinery.

However, decisions reached by thinking don't amount to much unless all available facts in connection with a job have been secured.

The way to obtain facts is to ask the people who have the desired facts to present them.

After twenty years of experience in manufacturing and installing thousands of Hyatt Roller Bearings in thousands of looms we have accumulated facts and information very valuable to anyone purchasing modern looms. And, most certainly, a loom isn't modern unless it is equipped with modern roller bearings.

Therefore, before you sign your new loom order ask us for information on bearings. Just write us a letter and the facts will be given without obligation. Or, if you prefer, a qualified engineer will call for consultation.



HYATT BEARINGS DIVISION • GENERAL MOTORS SALES CORPORATION • HARRISON, N. J.

R. P. G. PRINTING GUM — AN AHCO PRODUCT

HE'S RAISED A FAMILY

You know R.P.G., the old standby,—first in the field in 1933, constantly improved and STILL the leader; originally developed for use in printing Rapidogen, indigosol and naphthol colors and more recently adapted to vat color printing.

Now meet the offspring,—"chips off the old block" and destined to compete with their daddy in popularity.

Here they are:

1. **Rapidogen Gum XX**—particularly suitable for printing spun rayons and similar fabrics, but also suitable for cottons.
2. **Rapidogen Gum M**—an economy gum for low cost work, suitable for cottons, linens, rayons and mixed fabrics.
3. **AHCOVAT Gum,** having exceptionally wide adaptability in vat color printing; suitable for use alone or in combination with other gums and with starches.
4. **No. 622 Gum**—for difficult rayon printing operations.
5. **V.P.G. Gum**—the youngest member of the family, specially developed for printing vat colors on rayon, also widely used on cotton.

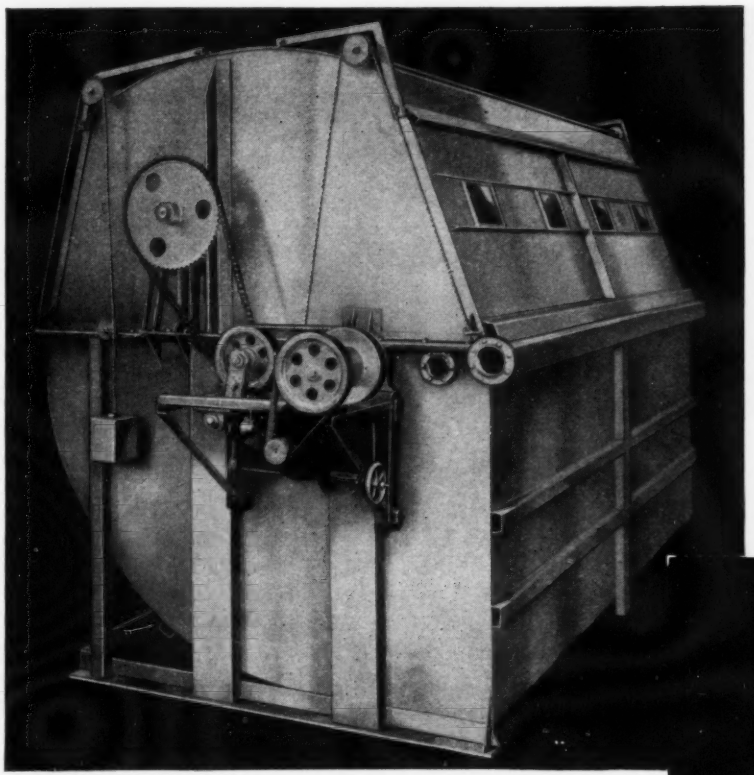
All of these products are characterized by a high color yield with low gum content in printing paste, economy in chemicals, and excellent washing out properties.

Tell us your printing problem and let us recommend the gum best suited to your purpose.

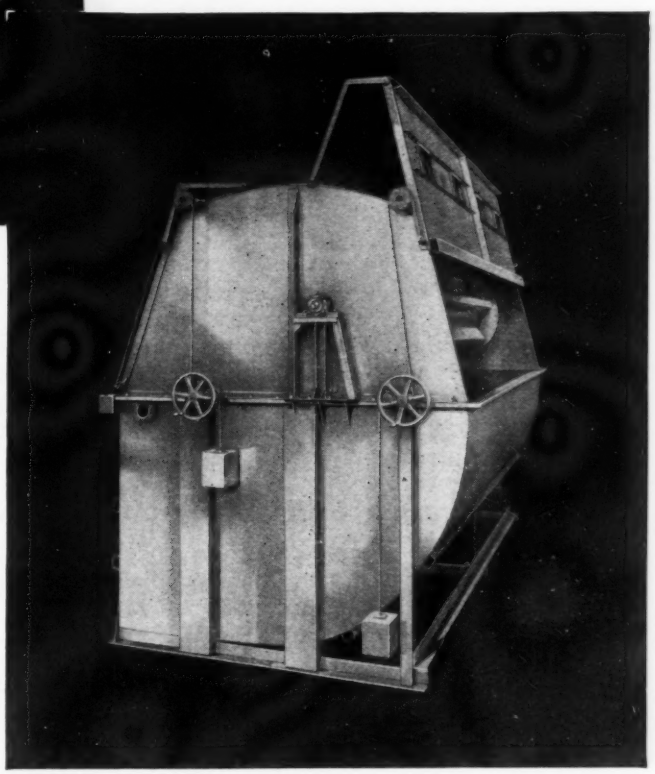
ARNOLD-HOFFMAN & CO., INC.

Established 1815 PROVIDENCE, RHODE ISLAND *Plant at Dighton, Mass.*

NEW YORK BOSTON PHILADELPHIA CHARLOTTE COLUMBUS GREENVILLE



HOW TO *Save money* IN THE PIECE DYEHOUSE



YOU can save steam, dye adds, labor, off-shades, etc., in the dyehouse by installing Hunter Totally Enclosed Piece Dye Kettles as illustrated.

Over $200,000.00 worth of these machines installed in two years offers proof of these distinct money savings.

The Kettles come complete with varispeed drive, enclosed bar or hump reels, lighted enclosures, complete and ready for operation. There is a size and type for any operation from sample dyeing to mass production, as well as for bleaching.

Any mill man interested in better and cheaper dyeing and bleaching is invited to mail the coupon, which will bring you complete details and a story of definite savings made in the wide variety of installations.

JAMES HUNTER MACHINE COMPANY

NORTH ADAMS, MASS.

Southern Agents: Carolina Specialty Co., Charlotte, N. C.

Western Representative: E. G. Paules, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.

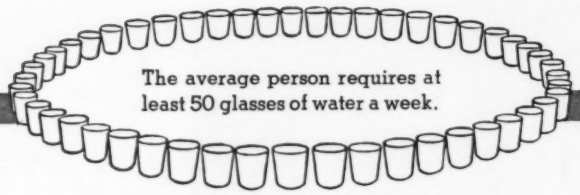
JAMES HUNTER MACHINE CO., North Adams, Mass.

Please send Bulletin S D.

Name .....

Mill .....

Address .....



PERMANENT OIL SUPPLY

PROLONGS LIFE • REDUCES MAINTENANCE

Westinghouse Water Coolers never need oiling. They are oiled once, at the factory, with a lifetime supply of special lubricant . . . Hermetically-sealed in with the mechanism. Thus, the oil is completely protected against grit and dirt and in turn protects and prolongs the life of the mechanism. Because Westinghouse Water Coolers never need attention, maintenance costs are greatly reduced.

Other Exclusive "PLUS VALUE" Features

Stainless Steel Top . . . Special Capacity Booster . . . High Efficiency Cooling Chamber . . . Built-in Watchman Protection . . . Burnout-Proof Motors . . . Hermetically-sealed Mechanism.

No grit, dirt, rust or corrosion . . . the things that cause most machinery to wear out, can harm the Westinghouse mechanism because it is Hermetically-sealed inside an airtight case of solid steel.

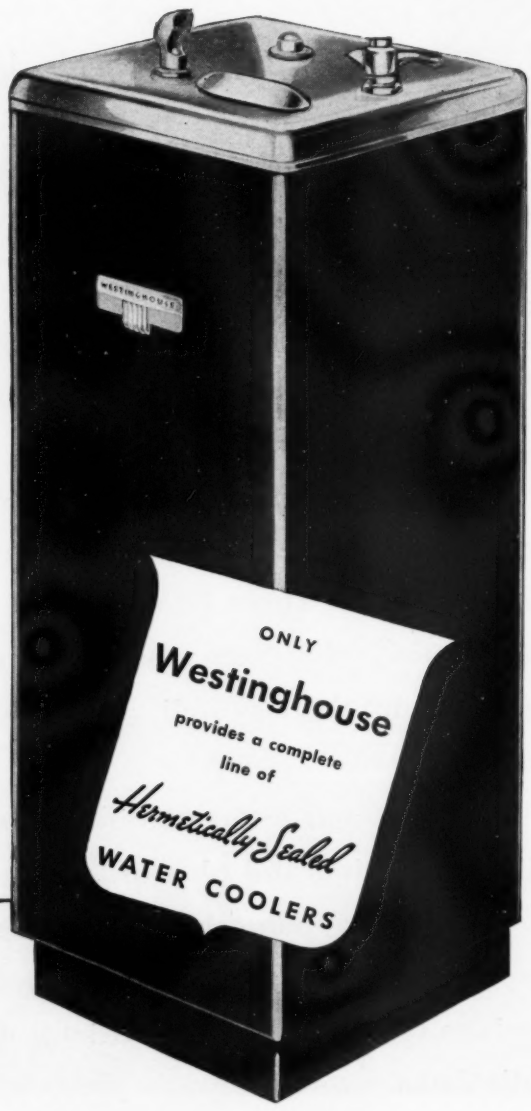
Because it is Hermetically-sealed, Westinghouse provides a plan for five years' protection on the sealed-in mechanism. This is based on the EXTRA years of trouble-free performance which experience shows you can confidently expect.

• • •

Westinghouse

WATER COOLERS

Explosion-proof models available



FREE. Ask your Westinghouse dealer for free copy of a useful folder—"How to Check Drinking Water Costs" or mail this coupon to—Westinghouse Electric & Manufacturing Company, Section 9054, Mansfield, Ohio.

NAME_____

ADDRESS_____

CITY_____ STATE_____

For
SOAPING PRINTS
Standard
TEXTILE SILICATE
WHITER BACKGROUNDS, brighter colors, sharper outlines . . . these give your merchandise greater sales appeal. Standard Textile Silicate, when used in your soaping formula, brings you this assurance.
Standard Textile Silicate is as mild as the soap itself, prolongs the life of the soap bath, and saves rewashes on ordinarily troublesome shades!
STANDARD SILICATES
For Textile Use
PEROXIDE BL'CH'G
KIER-BOILING
SILK-WEIGHTING
✓ SOAPING PRINTS
SCOURING YARNS
SCOURING RAYONS
CLOTH-WASHING
WATER TREATMENT
T-3-38

DIAMOND ALKALI COMPANY
Standard Silicate Division
General Offices · PITTSBURGH, PA.
Plants at Cincinnati · Jersey City · Lockport, N. Y. · Marseilles, Ill.

LUNKENHEIMER
BRONZE GATE VALVES

A Complete Line
for Steam, Water, Air, Gasoline and Oil Service

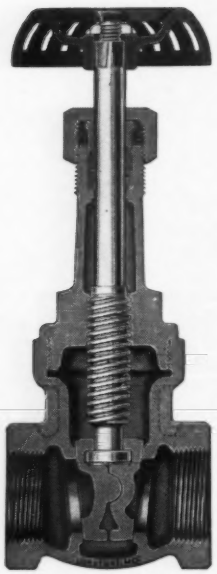


Fig. 2125
¼ to 3 in.
125 lb. S.P.
200 lb. W.O.G.

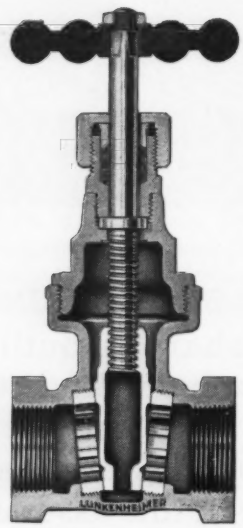


Fig. 768*
¼ to 3 in.
200 lb. S.P..
400 lb. W.O.G.

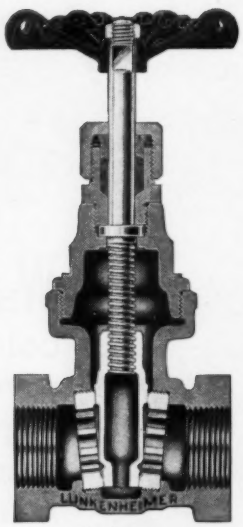


Fig. 771*
¼ to 3 in.
300 lb. S.P.
600 lb. W.O.G.

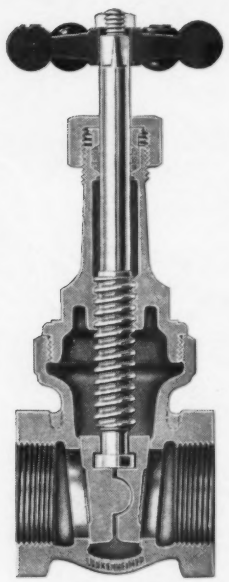


Fig. 427
¼ to 3 in.
150 lb. S.P.
300 lb. W.O.G.

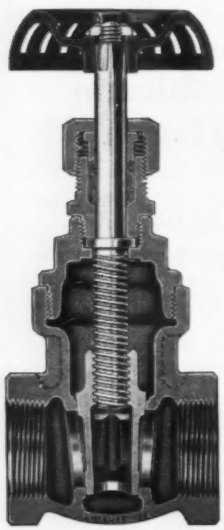


Fig. 2129
¼ to 3 in.
125 lb. S.P.
200 lb. W.O.G.

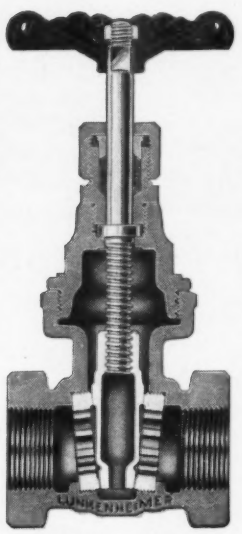


Fig. 1881*
¼ to 2 in.
350 lb. S.P.
1000 lb. W.O.G.

*Figs. 768, 771 and 1881 have renewable nickel alloy seat rings 1 in. and larger.

All patterns illustrated are also available with flanged ends.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT 318-322 HUDSON ST., NEW YORK

BOILER MOUNTINGS — LUNKENHEIMER VALVES — LUBRICATING DEVICES

11012-47A-10

GULF SCIENTISTS make further contributions to industrial betterment . . .

A TYPICAL EXAMPLE of research work in progress in the Gulf Laboratories (shown below). This special spindle testing machine measures and records starting and running torque of textile spindles operating under various speeds, loads and belt tensions. As a result of this experimental work, lubrication recommendations for specific installations can be made which will insure minimum wear, vibration and power consumption.

Machines of industry produce more at lower cost — with the aid of improved lubricants and better application methods developed by Gulf technologists. . .

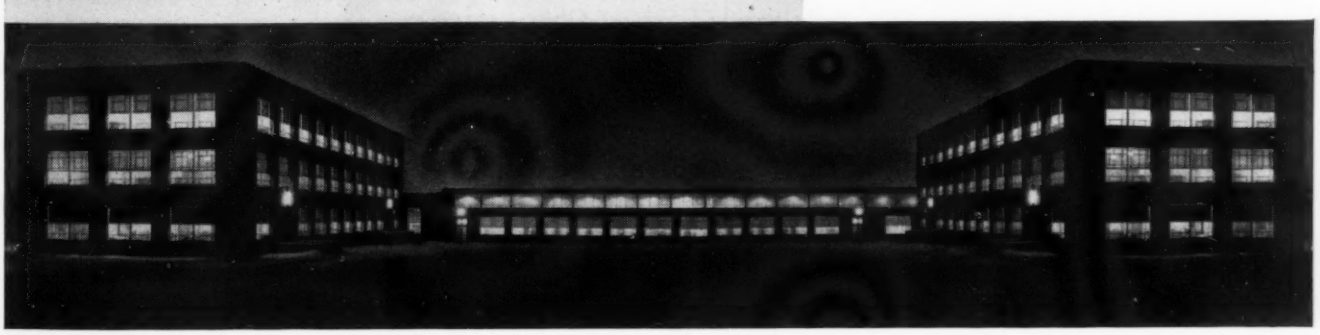
LUBRICATION science is making great inroads into the untold millions of waste and loss in real dollars which industry has been forced to shoulder each year because of excessive friction, wear and "upkeep" expense for machinery.

Working closely with the builders of mechanical equipment, Gulf research men have developed modern types of lubricants which provide for the higher speeds, heavier loads and more severe conditions of operation demanded by today's standards of efficiency.

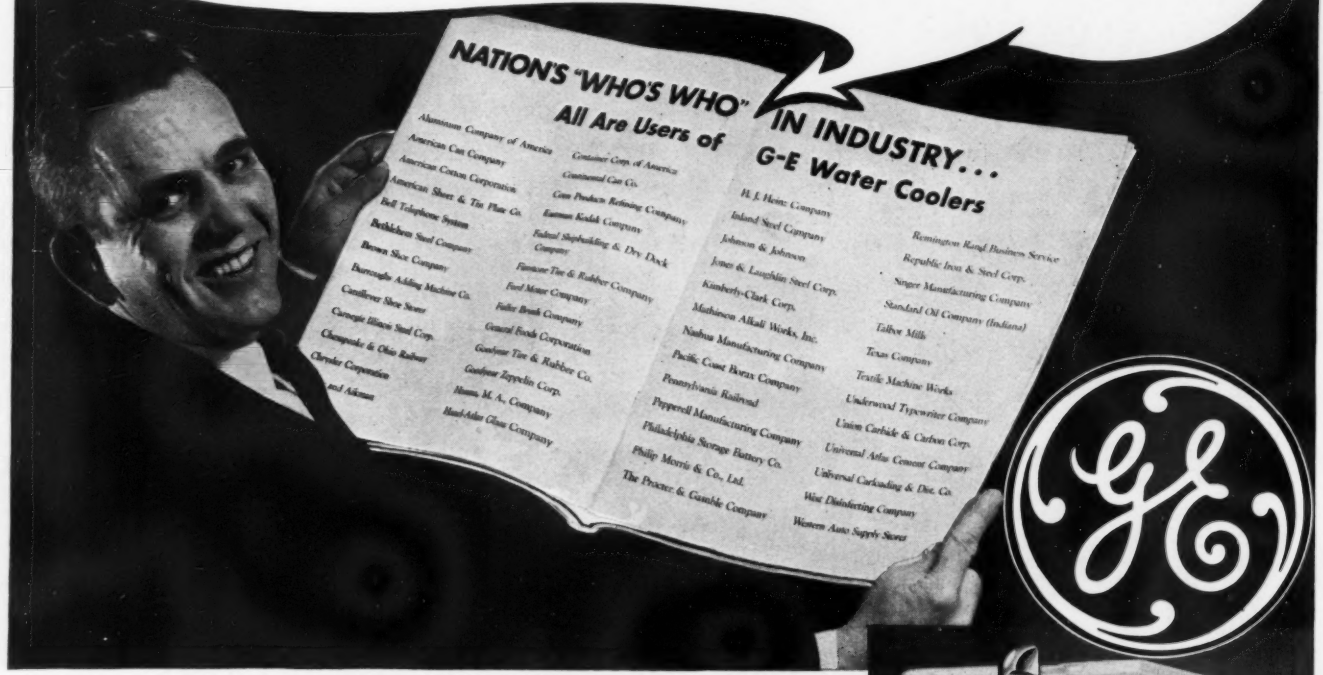
These better lubricants help plant managers reduce operating costs — save money on maintenance and power, improve both quality and quantity of production and lengthen the life of costly machines.

Gulf makes these better oils and greases available to you through more than 1100 warehouses in 28 states from Maine to Texas. Ask the Gulf engineer in your vicinity to recommend the proper grades for your equipment. He can help you insure low-cost operation for your machinery, old or new . . . Gulf Oil Corporation — Gulf Refining Company, Gulf Building, Pittsburgh, Pennsylvania.

GULF INDUSTRIAL LUBRICATION



A WATER COOLER IS KNOWN BY THE COMPANY IT KEEPS



Industry Buys More G-E Water Coolers Than Any Other Make

● The imposing list of factories, mills and foundries using General Electric Water Coolers reads like the "Nation's Who's Who in Industry." The General Electric is favorite because it delivers dependable, thrifty service through the years, and offers exclusive features found in no other water cooler. A noteworthy example is the Stainless Steel Water Reservoir that cannot rust, leak or corrode. Research keeps General Electric years ahead!

Get the Big, New G-E Catalog Today

—shows the complete line of General Electric Water Coolers and all their new features. Ask your G-E Dealer for a free copy *today* or write direct to General Electric Company, Commercial Refrigeration Section TC6, Nela Park, Cleveland, Ohio.

Nearly 2,000,000 people now enjoy cool, healthful, refreshing drinking water from General Electric Water Coolers every day.

GENERAL ELECTRIC

How does a FINISHING GUM get that way?

Textile gums and starches look pretty much alike but what a world of a difference there is when you put them to work.

These variations between the different starches and gums —and the reasons why—have been studied, analyzed and put to constructive use by the Stein-Hall laboratories.

The photograph shows a Stein-Hall chemist operating a pilot dextrine converter. Designed by our own engineers this miniature dextrine factory enables our laboratory to analyze each step in the manufacture of gums and dextrines and to control their characteristics and uniformity.

Both through fundamental research and through solving specific practical problems, we have been able to help many textile mills increase production, improve quality and effect substantial economies.

We offer this service to you without obligation.

•

STEIN, HALL & COMPANY, INCORPORATED

285 Madison Avenue, New York

LABORATORIES AT NEW YORK, PROVIDENCE AND CHARLOTTE

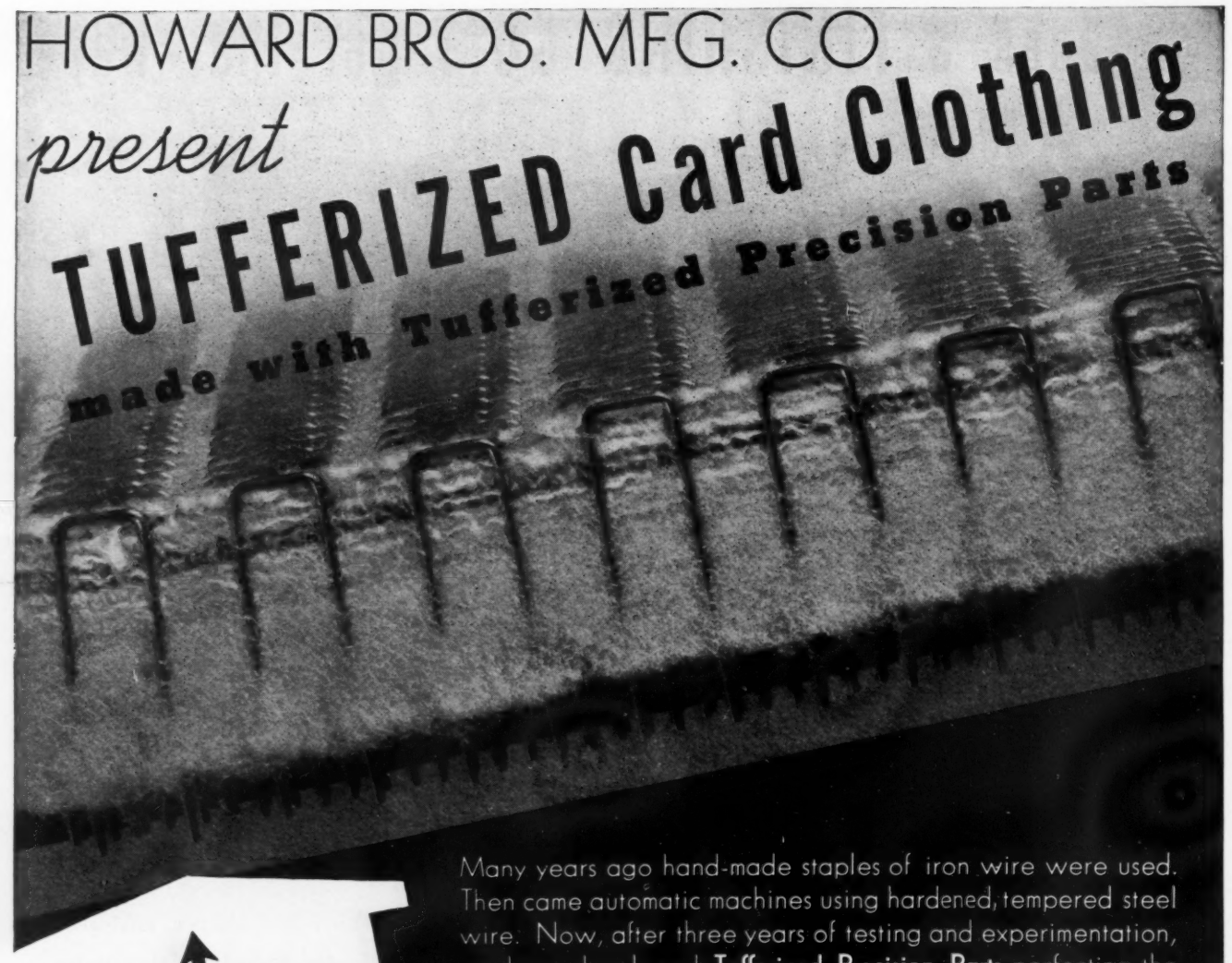
A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

HOWARD BROS. MFG. CO.

present

TUFFERIZED Card Clothing

made with Tufferized Precision Parts



Many years ago hand-made staples of iron wire were used. Then came automatic machines using hardened, tempered steel wire. Now, after three years of testing and experimentation, we have developed **Tufferized Precision Parts** perfecting the cutting and setting of staples in the justly famous Patented Tuffer Foundation. A combination that's hard to beat.

These improvements will allow more uniform carding, nice smooth finish to coarse or fine yarns, and longer service. The carder's dream of true and positive setting from beginning to end of the strip is now a reality.

Micro-photos showing improvements resulting from Tufferized Precision Parts.

Now every wire can be cut clean and free from burrs.

Now every staple is perfectly square and uniform.

Now every staple seats square, flat and tight with each wire parallel and uniform.

In the NEW TUFFERIZED CARD CLOTHING

- **Burrs will be entirely eliminated**
- **Wires will be straight and uniformly spaced**
- **Grinding will be greatly reduced**
- **And it will set tighter and lay flatter on your cylinders to insure more even setting of the rolls.**

Write for any further explanation or more details. Be among the first to equip with new TUFFERIZED CARD CLOTHING.

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

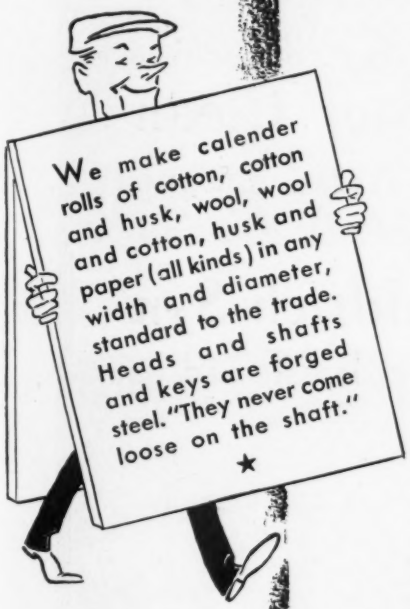
JUST TRY ONE OF OUR ROLLS...

New or Refilled

...Then you'll know why they are called Long Life Rolls. You'll also know why they are used in the largest textile plants in the world.

During more than half a century of roll making, we have developed a process for making calender rolls which makes us ask *you* to try just *one* Long Life Roll. Put it in the stack with any other roll and time them both. We want you to be sure that you get more for your money in a Long Life Roll.

★


We make calender rolls of cotton, cotton and husk, wool, wool and cotton, husk and paper (all kinds) in any width and diameter, standard to the trade. Heads and shafts and keys are forged steel. "They never come loose on the shaft."
★

H. W. BUTTERWORTH & SONS CO., PHILADELPHIA, PA.

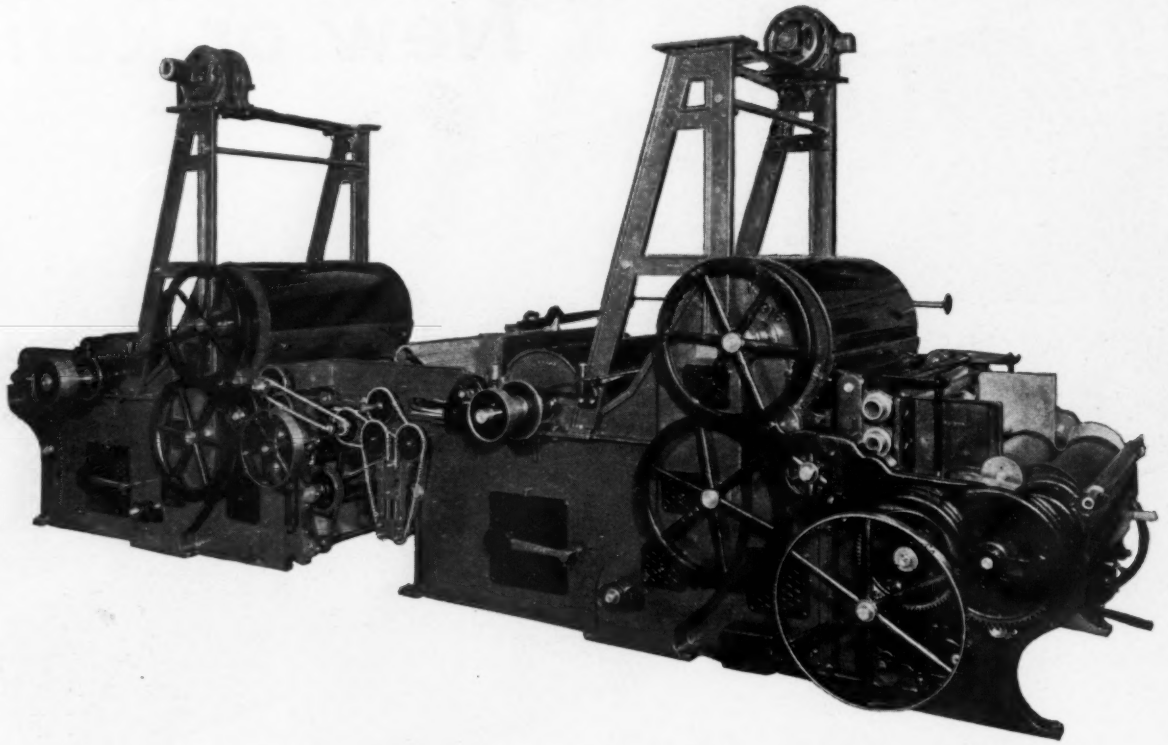
Established 1820

PLANTS at PHILADELPHIA and BETHAYRES, PA.

New England Office:	Southern Office:	In Canada:
TURK'S HEAD BUILDING	JOHNSTON BUILDING	W. J. WESTAWAY CO.
Providence, R. I.	Charlotte, N. C.	Hamilton, Ontario

BUTTERWORTH *finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY



A NEW PICKER
BUILT INTO OLD FRAMES

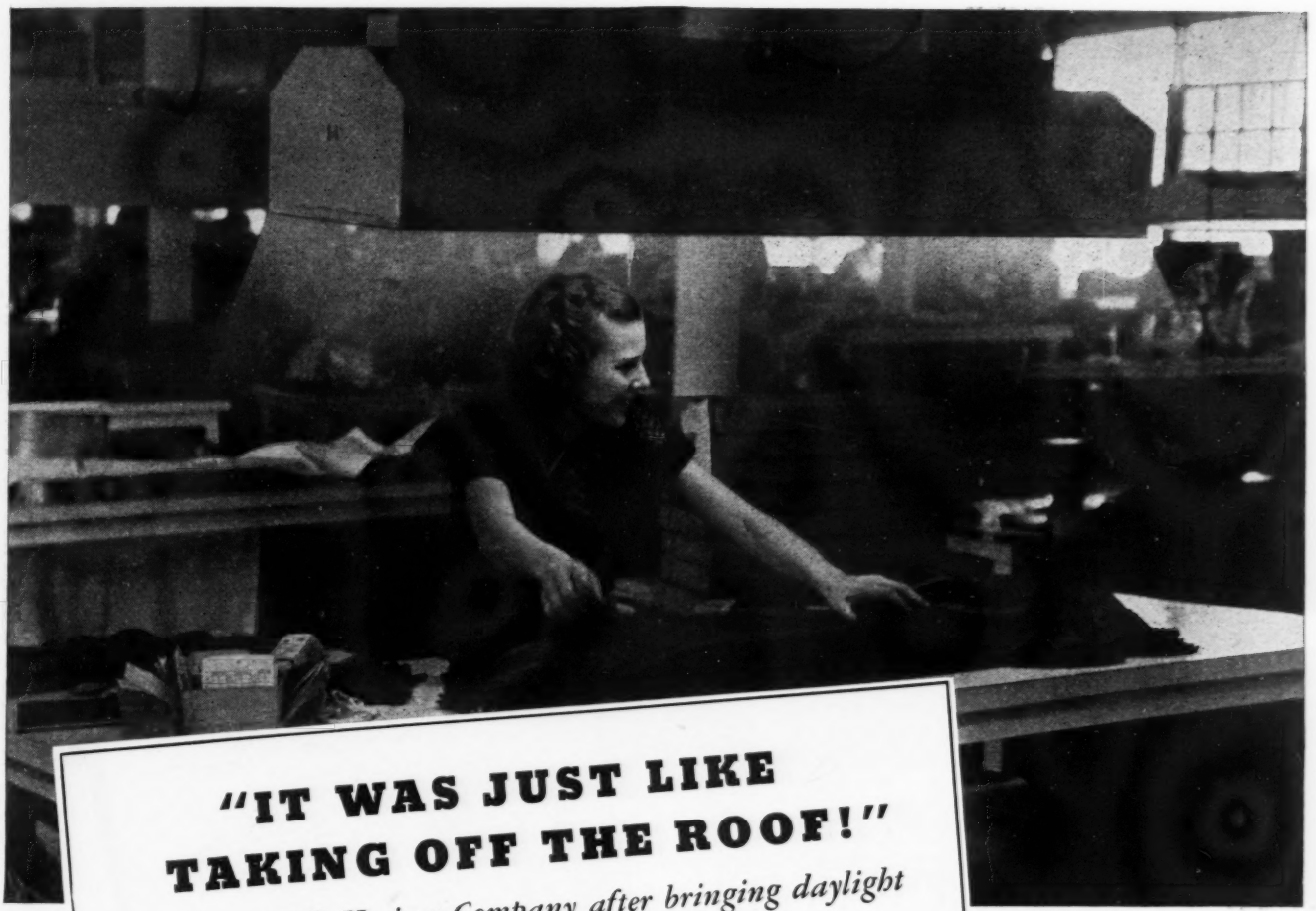
The machine illustrated is an *Aldrich Synchronized Single Process Picker,* entirely new throughout except for the iron framework. This picker is designed to operate without the conventional hopper feeder and is fed directly from a *Gyrator Cleaning, Blending* and *Distributing Machine* equipped with automatic feed boxes.

The combination of the *Gyrator* with the *Aldrich Synchronizers* produces the cleanest and most uniform laps turned out by any picking system.

By utilizing your old frames, the cost of new pickers is cut in half.

AldricH MachinE

Greenwood, **WorkS** South Carolina



"IT WAS JUST LIKE TAKING OFF THE ROOF!"

says Real Silk Hosiery Company after bringing daylight indoors with G-E Fluorescent MAZDA lamps

Mistakes just don't go in this Real Silk pairing department where final color matching is done. Even in full daylight, this new fluorescent lighting is depended on for uniform and precise conditions.

BEFORE *the installation of G-E Fluorescent MAZDA lamps, the lighting produced 50 footcandles of light of corrected color over a one foot circle. A certain amount of heat and glare was inevitable.*

AFTER. *With the new G-E Fluorescent MAZDA lamps over each table, operators enjoyed nearly double the light over a far wider area. Heat, too, was greatly reduced because fluorescent lighting is much cooler. Color matching is easy with "indoor" daylight.*

THE greatest advance in lighting since Edison invented the first incandescent lamp! That's what many experts say about the new G-E Fluorescent MAZDA lamps. And nowhere are they receiving more enthusiastic acceptance than in the textile industry . . . where color matching is vitally important. A lamp is now available that gives a close approximation to daylight at low cost and high efficiency. General Electric Fluorescent MAZDA lamps provide economical light and are 50% cooler than incandescent lamps of the same wattage . . . an important point for mills located in regions of high summer heat. These lamps are also available in red, gold, pink, blue, green and white. Standard sockets and control equipment are now readily available.

If color matching is important in your business, mail the coupon now!

GENERAL ELECTRIC
FLUORESCENT MAZDA LAMPS

MAIL COUPON FOR COMPLETE INFORMATION

General Electric Co., Dept. 166-C-F,
Nela Park, Cleveland, Ohio.

Please send me, without obligation, further information about G-E Fluorescent MAZDA Lamps.

Name .....

Company .....

Street .....

City ..... *State* .....

PEPPERELL
Manufacturing Company

Executive Offices 160 State Street Boston
Sales Offices NEW YORK, BOSTON, CHICAGO, NEW ORLEANS, SAN FRANCISCO, ATLANTA, PHILADELPHIA
Plants BIDDEFORD, MAINE; LINDALE, GEORGIA; OPELIKA, ALABAMA; LEWISTON, MAINE; FALL RIVER, MASS.

Fafnir Bearing Company
New Britain, Connecticut

LINDALE, Georgia
November 11
1936

Gentlemen:

In January 1932 we completed the installation of 194 Saco-Lowell spinning frames in our No. 3 Mill. We specified Fafnir bearings on the cylinders of these frames, and each frame had six Fafnir ball bearings, making a total of 1,164 bearings. Out of this number we have had trouble with only two bearings.

It was necessary to replace one bearing in 1933 and one in 1934. An Allen set-screw on the collar of both of these bearings came loose, and this caused the trouble.

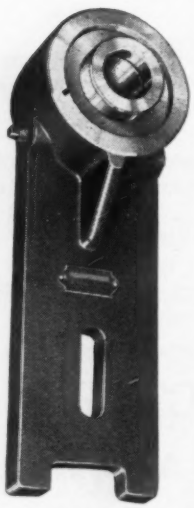
In February 1936 we installed 124 of the same type spinning frames in our No. 1 Mill, and specified Fafnir bearings on the cylinders of these frames. So far, we have not had any trouble with a single frame. So far, we since the installation. We are single bearing in this mill the results we are getting, and the perfectly satisfied with from these bearings is beyond our expectations. service we have gotten

Before we can give you any information or photographs for publication, it is necessary that we get permission from our advertising manager, Mr. Allyn B. McIntire; but if you will submit anything you care to publish to us, we will be glad to take it up with him, and we are sure he will give you his permission.

Yours very truly
H. P. MEIKLEHAM, AGENT
BY: R. D. Harvey
Assistant Agent

RDH:HcR

99.83% PERFECT PERFORMANCE OVER 4 YEARS' TIME!



This Fafnir Spinning Frame Gear End application used by Pepperell is only one of scores of specialized ball bearings developed by Fafnir for the specific needs of the textile industry. Write for Textile Catalog No. 9.

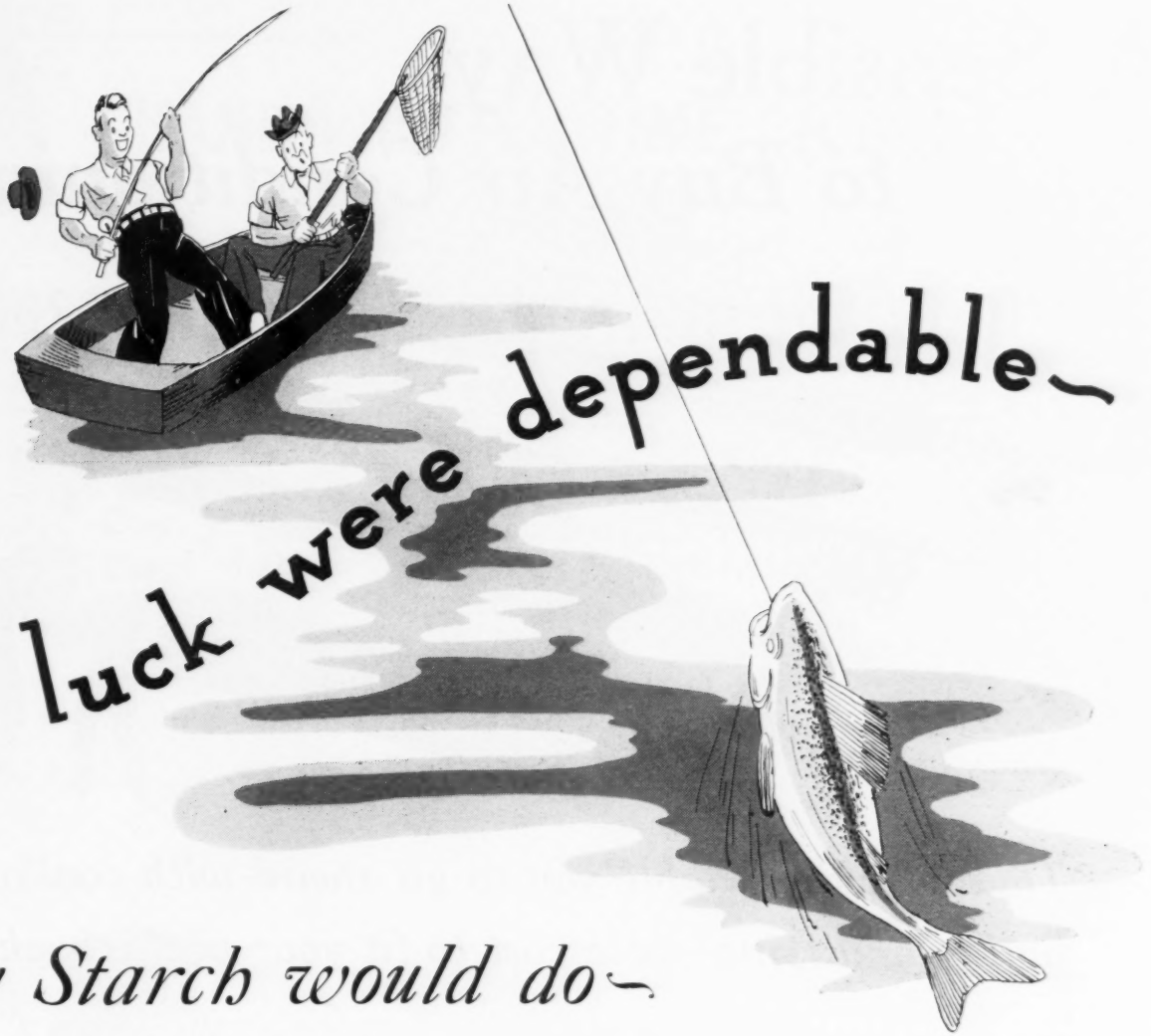
Considered one of the most modern and efficient in the industry, this Pepperell mill at Lindale, Georgia owes a part of its high performance record to nearly two thousand Fafnir Ball Bearing Spinning Frame Boxes. More than half of these bearings, installed four years ago, have performed nearly 100% perfect ever since.

In choosing Fafnirs, Pepperell *counted on* the unequalled ease of installation made possible by Fafnir's exclusive self-locking collar; the reduction of starting torque; the decreased lubrication cost; the reduced fire hazard and cleaner product that results from grease instead of oil lubrication.

But Fafnir Ball Bearings gave more—rolled up a *performance* record that prompted their specification on a second order—that prompts *your* investigation if you seek profits and increased production through bearing efficiency. The Fafnir Bearing Company, New Britain, Conn. Branch offices: Atlanta, Birmingham, Boston, Charlotte, Dallas, Houston.

FAFNIR BALL BEARINGS

THE BALANCED LINE • • MOST COMPLETE IN AMERICA



If luck were dependable—

any Starch would do—

---but mills that can't take chances use STALEY'S... the high quality starch of unfailing uniformity.

Rely on Staley's cooperation and service at all times.

Staley's *Textile Starches*

A. E. STALEY MANUFACTURING COMPANY

DECATUR, ILLINOIS

ATLANTA
SPARTANBURG

PHILADELPHIA
SAN FRANCISCO

DALLAS
CHICAGO

NEW YORK
BOSTON

A Sensible Way *to Buy Air Conditioning!*

These 4 plans enable you to go ahead with cooling and humidifying—at a cost to fit your pocketbook!

WHAT IS your cooling and humidifying problem? Perhaps you can't afford but think you need a complete engineered evaporative cooling and humidifying system—yet you regard anything less than this as a makeshift installation. On the other hand, perhaps you want some inexpensive equipment for room cooling—to supplement your existing humidifying system. Or, you may require something in between these two extremes.

At any rate, let's sum it up by saying you want *definite* cooling and humidifying relief—*at a cost that you can afford to pay.* Then, keep this in mind: Sturtevant Textile Cooling and Humidification is designed to exactly meet these requirements!

The four plans to the right will give you the Sturtevant Cooling and Humidifying story in a nutshell. Each plan has been developed for a different set of general conditions commonly encountered in the textile field. Each can be adapted to precisely meet individual mill needs.

Why not discuss your cooling and humidifying problem with one of our nearby representatives. He will be glad to talk over your situation, study it, and then submit recommendations for a Sturtevant Cooling and Humidification installation which will not only meet your needs but also satisfy the requirements of your pocketbook.

Sturtevant makes available over 75 years of air engineering experience to help textile mills economically and effectively solve their cooling and humidification problems.

COOLING & AIR CONDITIONING DIV.
B. F. STURTEVANT COMPANY
HYDE PARK, BOSTON, MASS.
Atlanta Camden Chicago Greensboro
Los Angeles New York

Sturtevant
Puts Air to Work

PLAN 1.

Vap-Air Units—**An extremely low cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.**

PLAN 2.

Vap-Air Blender Units Plus Your Head System—**A carefully engineered low cost system which provides a *guaranteed* summer temperature reduction. Installation under the supervision of Sturtevant experts includes revision of present humidifying system so as to provide desired degree of temperature reduction most efficiently. All under automatic control.**

PLAN 3.

Sturtevant Textile Evaporative Cooler and Humidifier System—**A "tailor-made" system, completely installed, of either several unit systems, or one large system. Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control.**

PLAN 4.

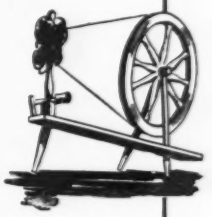
Sturtevant Textile Evaporative Cooler and Humidifier System Combined with Supplementary Head Systems—**Essentially the same as Plan 3 but adapted for rooms requiring relative humidity above 65%. All under automatic control.**

Cooling & Humidification to Fit Your Pocketbook

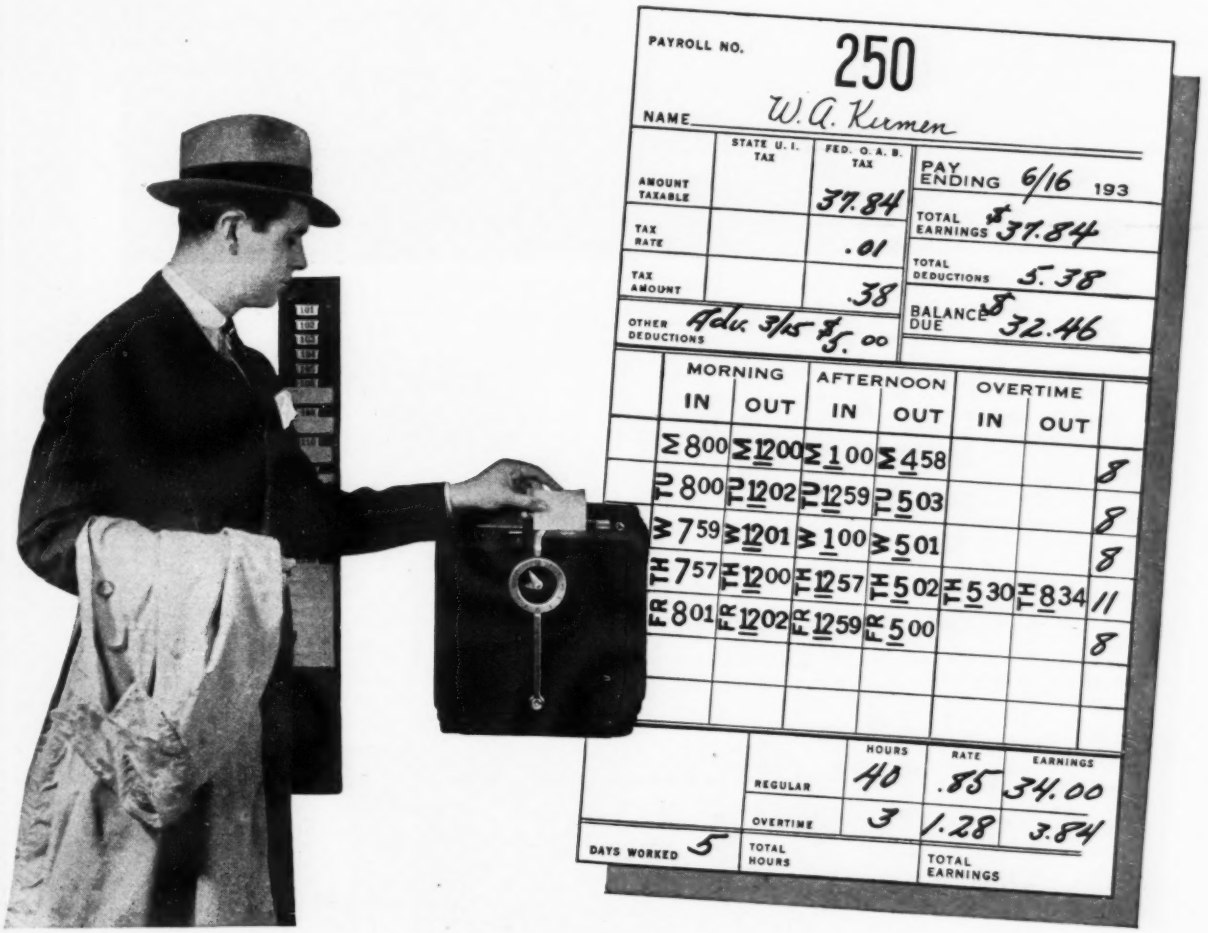
HAND-WRITTEN TIME RECORDS

are as

OBSOLETE AS THE SPINNING WHEEL



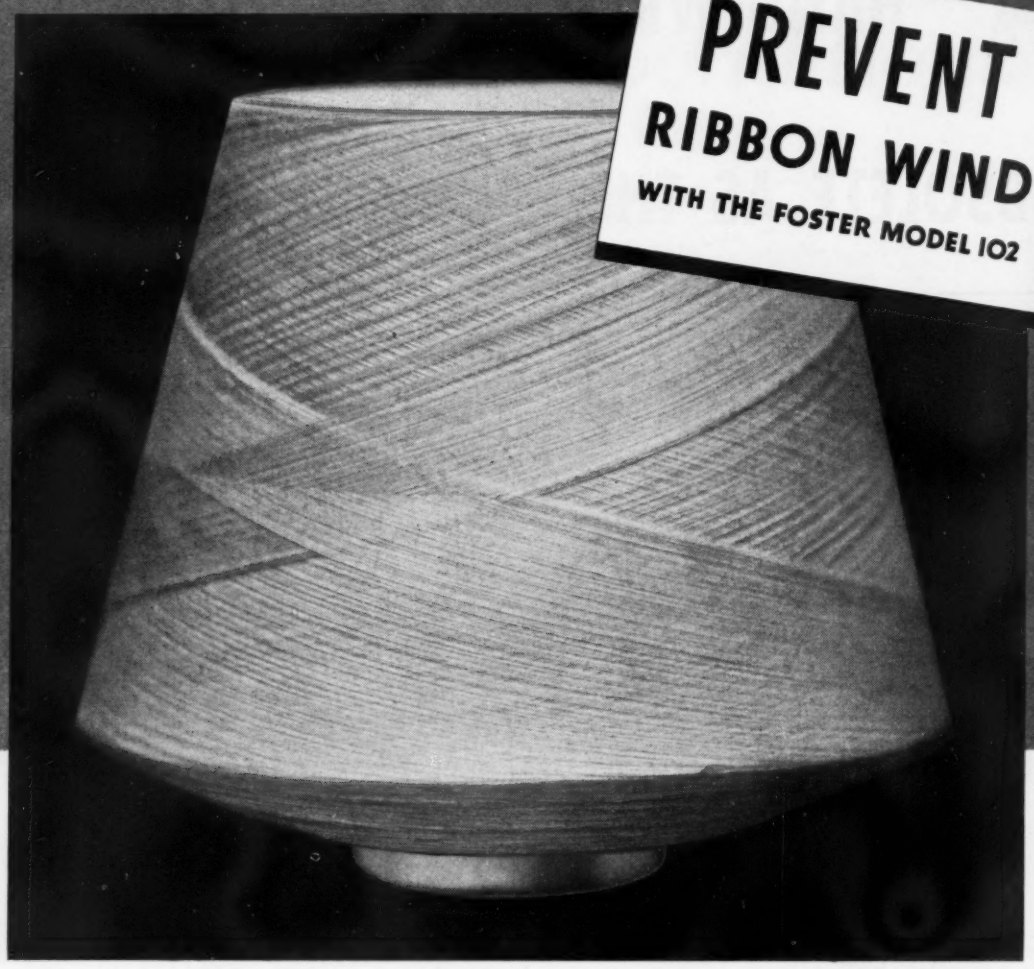
Back in the days when all the thread we needed could be produced by household spinning wheels, it was easy enough for employers to keep reasonably accurate pencil records of employee attendance time. Spinning thread and keeping time records by hand are both relics of the past . . . long since displaced by speedier, more accurate and economical mechanical methods. The most modern ring spinning machine attains a speed of 11,000 revolutions a minute, and the latest International attendance recorder permits employees to print their own in-and-out time records at the rate of one every second.


PAYROLL NO. 250
NAME W. A. Kumen
STATE U. I. TAX
FED. O. A. B. TAX
AMOUNT TAXABLE 37.84
TAX RATE .01
TAX AMOUNT .38
OTHER DEDUCTIONS Adv. 3/15 $5.00
PAY ENDING 6/16 193
TOTAL EARNINGS $37.84
TOTAL DEDUCTIONS 5.38
BALANCE DUE $32.46
MORNING IN OUT
AFTERNOON IN OUT
OVERTIME IN OUT
M 8 00 M 12 00 M 1 00 M 4 58 8
TU 8 00 TU 12 02 TU 12 59 TU 5 03 8
W 7 59 W 12 01 W 1 00 W 5 01 8
TH 7 57 TH 12 00 TH 12 57 TH 5 02 TH 5 30 TH 8 34 11
FR 8 01 FR 12 02 FR 12 59 FR 5 00 8
HOURS RATE EARNINGS
REGULAR 40 .85 34.00
OVERTIME 3 1.28 3.84
DAYS WORKED 5
TOTAL HOURS
TOTAL EARNINGS

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters Building
590 MADISON AVENUE, NEW YORK, N. Y.

Branch Offices
IN PRINCIPAL CITIES OF THE WORLD



PREVENT RIBBON WIND

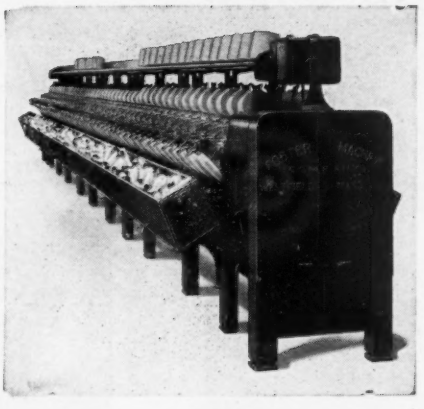
WITH THE FOSTER MODEL 102

A highly efficient "ribbon breaker" which controls the ratio between the guiding of the yarn and the speed of the winding roll surface is considered one of the most important features of the Foster Model 102 Winder by many mill men.

Other advantages are as follows:

1. Angle of wind flexibility (9 different angles from 9° to 18° simply by changing 4 small gears in the head end of the machine).
2. Twice the production with ⅓ less labor, as compared with older models.
3. Wide range and uniformity of cone density due to precise tension and pressure controls.
4. Ease of operation (self threading tensions).
5. Low upkeep (no delicate parts).

Write for our new circular A-91, which gives complete details.



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WESTFIELD, MASSACHUSETTS
Southern Office, Johnston Bldg., Charlotte, N. C.

FOSTER MODEL 102

FOR WINDING COTTON, MERCERIZED, WOOLEN, WORSTED, MERINO, SPUN SILK AND SPUN RAYON YARNS

EXTRACT EFFICIENTLY WITH A FLETCHER

BUILT BY FLETCHER WORKS

Good bearings are as essential on this streamlined Fletcher Extractor, with its V-belt drive, as on spinning and twisting frames, sanforizers, warpers, and other types of textile machinery. They must take varying combinations of radial and thrust loads on the main spindle as this machine centrifugally removes excess dye liquor from materials.

That the bearings on this unit are SKF Deep Groove Ball Bearings is your assurance of long life and almost effortless running without the penalty of adjustments, constant lubrication or rapid wear. Let an SKF representative recommend, from SKF's broad line of more than 3,000 bearing types and sizes, the bearings best suited to each requirement on your machines.

SKF INDUSTRIES, INC., PHILADELPHIA, PA.

4333

THE BEARINGS ARE SKF

BALL & ROLLER BEARINGS

"You can save $4800 the First Year!"

(...but it was actually $7600 by the time the year was up!)*

"Taylor Automatic Control in your Slasher Room will start cutting costs right away and enable you to get more uniform finished goods"

THE TIME for a decision was at hand. Would the mill approve the new Slasher Control?

"But the installation you recommend will cost $8000," objected the mill manager.

The Taylor Representative nodded. "That is correct. But we estimate that in the first twelve months your saving will be around $4800. At that rate the Taylor Control system will pay for itself in less than two years. We believe it will give you economies in amount of size used, savings in steam and cotton, and a decrease in warp loom stops and an increased weave room efficiency.

"From the very beginning you will get production of more uniformly conditioned warps, a uniform hand and better appearance for your finished cloth and fewer seconds.

"You will save money and use Taylor Slasher Control to help you make more."

The installation went in. But what actually happened was this: So efficiently did the Taylor System operate that instead of $4800, the mill saved $7600 **BEFORE THE END OF THE FIRST 12 MONTHS!**

• • •

HERE is one more example of results that have followed Taylor Engineers and Taylor Systems of Temperature Control into slasher rooms of leading mills over the country. Every Taylor installation is engineered to meet the needs of a specific mill. It is recommended only after a thorough study of existing conditions and the kind of cloth produced.

A Taylor System in *your* mill may not cost $8000. Neither may it save as much as $7600, or even $4800 the first year. But you can count on more efficient and economical slashing from a system especially designed to fit into your complete mill operation. And textile executives have often found that Taylor Automatic Slasher Control pays for itself within twelve months.

See what Taylor can do in your slasher room. For full information on a survey, ask a Taylor Representative or write to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, England.

**Based on an actual case in our files.*

Taylor

Indicating / Recording • Controlling

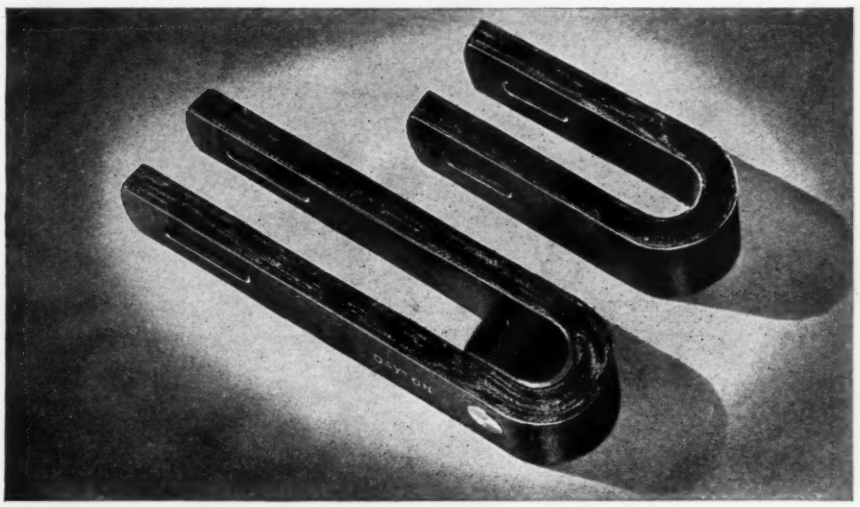
TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

For Greater Economy Choose

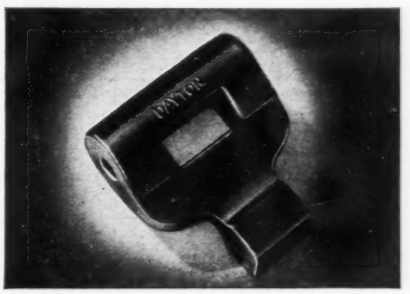
DAYTON Blue Label LOOM SUPPLIES

Backed by 8 Years Experience, Development, Testing and Production— Proved by Installation after Installation

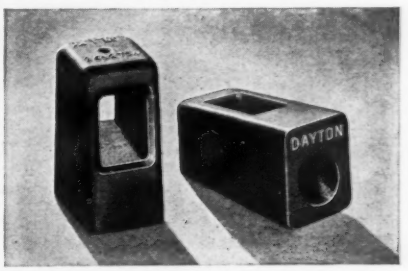
DAYTON BLUE LABEL LOOM SUPPLIES are products of Dayton's famed laboratory controlled manufacturing methods. They represent the best that quality materials, skilled labor, modern equipment and trained technical experts have so far produced. They embody the results of over *eight years* experience in development, testing and production. Each product in the Dayton line of Blue Label Loom supplies is designed and manufactured specifically for the job it is intended to do. And installation after installation has proved their greater economy. Write today for proof of their money-saving advantages or get complete details from your nearest distributor. The Dayton Rubber Mfg. Co., Dayton, Ohio and Charlotte, N. C.



DAYTON LUG STRAPS are specifically built with these essential qualities: 1. They have extra strength beyond every requirement. 2. They have sufficient cushion to assure protection to other parts such as cam rollers and picker sticks. 3. They have the desired resilience plus the ability to absorb shock with immediate come-back. 4. They never require adjustment. 5. They have long, trouble-free life. Their low first cost assures you greater economy. Their freedom from adjustment and their constant power maintenance assures you increased production at lower cost. Dayton Loom Supplies are protected by U. S. Patents issued or pending.



REVERSIBLE DROP-BOX PICKERS are made specifically for three purposes with the exclusive "Three-point Density" construction. *Point No. 1.*—Their composition is *harder* around the spindle rod. At this point a self-lubricating resinous bearing which will not become egg-shaped in service is used. *Point No. 2.*—A softer composition is used at the picker stick contact. *Point No. 3.*—Still another composition is used at shuttle contact to eliminate shuttle point loosening. So this "Three-point Density" construction accomplishes these three purposes: 1. Gives maximum cushion . . . positively will not wear the picker stick. 2. Gives proper cushion to shuttle point. 3. Gives perfect throw to shuttle throughout the life of the picker.



DAYTON LOOM PICKERS—Special fabrics bonded together with extra strong, resilient rubber gives Dayton Blue Label Pickers the proper cushion and approximately twice the strength of other pickers of this type. Easy to install—they fit the stick and yet have sufficient reserve stretch to accommodate large and off-size sticks. Molded under controlled heat and pressure, they keep their shape and stay "put" on the stick—assure maximum efficiency and reduce shuttle costs.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio and Charlotte, N. C.

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JACOBS
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- BANDS
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- RIDERS

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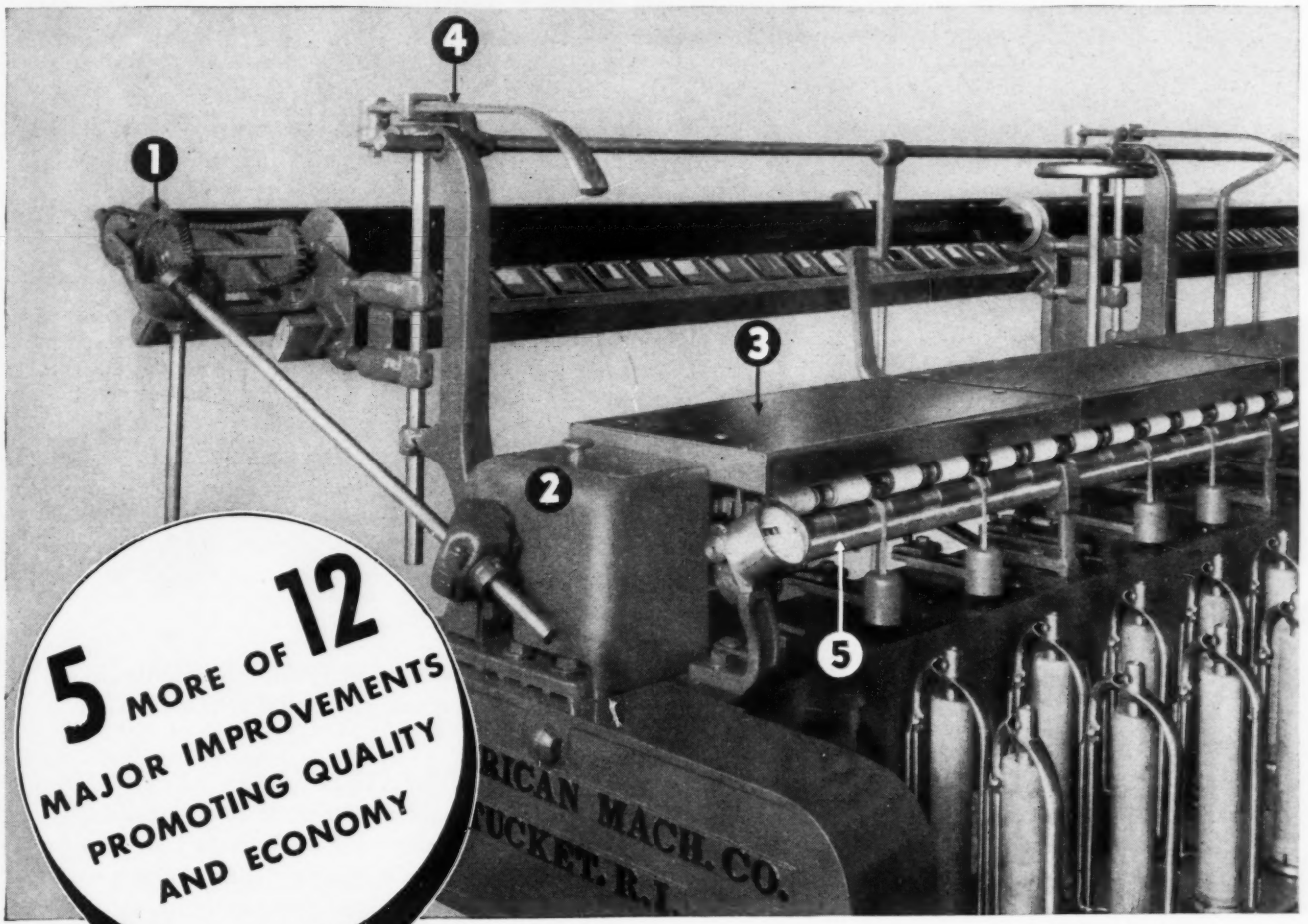
THE NEW H&B
HIGH-DRAFT ROVING FRAME

for ONE or TWO Process Roving, drafting drawing frame sliver up to 35 to produce up to 6 hank roving in one operation. To produce finer roving, this machine's product goes to conventional 3 roll jacks or fly frames.



5 MORE OF 12 MAJOR IMPROVEMENTS PROMOTING QUALITY AND ECONOMY

Illustrated herewith are 5 more major improvements which make the H & B High-Draft Roving Frame an even more profitable investment than before:—**1.** Adjustable bevel gear back lifting roll drive, with cover removed, giving greater stability and smoother operation. **2.** Worm drive adjustable traverse motion, protected by cover, which eliminates dwell. **3.** Rustless metal clearer covers with cylindrical front roll clearer. **4.** New type horse head and belt shipper, giving more rugged construction and more positive operation. **5.** Slotted type underclearer which prevents waste from getting into work and reduces frequency of cleaning. . . Altogether there are 12 major improvements which you should know about. Write without delay for further details regarding this completely redesigned machine.

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Textile Mill Machinery
PLANT AT PAWTUCKET, RHODE ISLAND

Boston Office: 161 Devonshire Street
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Going it BLIND

HOW far can a business go when it travels blind, never seeing or knowing its customers?

How long could it last if its entire sales force suddenly shifted over to a rival company?

These are questions that might well trouble the mill owner whose products are marketed exclusively by an agent, through an alien sales force . . . or whose credits, invoices and collections are all handled by a finance institution that side-tracks the mill and deals directly with its own sales outlets.

Do you have direct contact with the customers who job or retail your products? Do you sell them *your* wares, *your* company? Do you arrange *your* terms with them, invoice them in *your* name, and complete the cycle of personal relationship by having them recognize *you* as the principal in all your dealings?

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VOL. 103 — JUNE, 1939 — NO. 6

COTTON
SERVING THE
Textile Industries

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SHORTS AND REMNANTS

Stop and Think

The General Manager of a prominent chain of Southern Mills, in two recent letters, puts questions which will give many another mill man cause for thought:

"One of the big subjects we did not discuss and settle was the question of the future of the cotton part of the Textile Industry, and as to whether or not we are going altogether to synthetic fibers, and whether or not that means that our present machinery will be outmoded or whether this is just a lot of talk."

and

"What would you do if you had a pretty good mill which needed modernizing? Would you go ahead and spend $1,000,000 on it, and bring it up to date with best machinery available at the moment, strictly for cotton?

"You will be interested in a little aftermath of the Greenville Show. I called our 35 to 40 people together, who had attended the Show and we built a mill in my office one night, based on what they had seen and what they thought of these things. It was a very interesting meeting, and was naturally stimulating."

◆

How Deep Is A Well?

"In a cotton mill, how many looms is it possible for one person to operate, either under the old methods or under the modern methods?"

DORIS HASSELL

Readers Research Bureau,
P. F. Collier & Son Corp.
New York City.

◆

Selling Agent Wants Connections

"We are desirous of making connections as selling agents for cloth and fabrics, and I thought that you might have some mill friends that would be interested in our services. We are especially interested in flannels, for use as garment interlinings, but are also interested in all types of fabrics".

ARTHUR E. JEROME

Direct Mill Sales Agency,
320 Broadway,
New York, N. Y.

◆

Manufacturing Spun Rayon

"Kindly inform me where I would be able to purchase a Book on, How to manufacture Rayon, both carding and spinning."

L. G. HOOPER

Textiles-Incorporated,
Rock Hill, S. C.

(Maybe we should put all of our articles into a book, as we have a record, available to interested readers upon request, of 24 articles carried in past 3 years on spun rayon.)

Reprints On "Quality Control"

"We yesterday sent you our order for one hundred copies of reprints of the article on 'Quality Control' in the April issue. Please make this for 200."

KARL BISHOPRIC

Spray Cotton Mills,
Spray, N. C.

What's Wrong Dept.

A would-be editor writes us that the trouble with industrial papers is their lack of discussions written in clear, understandable terms. He says "It is a regrettable fact that technical erudition is frequently nullified by a ponderous style."

◆

Miscellaneous Dept.

Since we have no regular department for wall paper designing, we decided the following would have to be listed under "Miscellaneous".

"You seem to have an advisory service in the magazine COTTON. I am a designer and have been specializing on designs for cretons and wall papers. I would appreciate any advice as to where I might sell these designs."

GRACE CUMMINGS

16 Concord Square,
Boston, Mass.

◆

From Switzerland

"I beg to order you for resale: One Copy: Thomas Nelson: 'Genaue Erklarung der Herstellung von Drehergeweben' (appeared in the periodical COTTON 1932 5-32 only in *German* edition)."

K. VOSER-RICKNER

Rapperswil St. G.,
Switzerland.

(The 1932 articles by Thomas Nelson were on "Leno Weaving and Designing", and were furnished to this reader at a price of $1.00.)

◆

No Prophet Is Without Honor

We are always publishing letters from Canada, Mexico and abroad, and all over the country from folks writing us for information. It is refreshing for a change to note a bagging concern in our own backyard writing to Link-Belt (power transmission) Company's Philadelphia Office, for information on loom manufacturers. Our face may be a little red, but since the inquiry finally reached headquarters (us) via Link-Belt, our pride was not too deeply wounded, and we passed on to the inquirer the information desired. After all, we don't get all the inquiries, but we do try to answer as well as we can, the multitude that come our way.

◆

Helping Others

"Being a subscriber to this magazine, I have reason to believe that it is one of the best textile magazines on the market and in preparing the above article and with your consideration I feel that if I may place before my brother dyers an outline of the troubles that can arise from such a condition as described, any such labor involved in arriving at a solution of this kind will be justified."

MILTON J. HOFFMAN

Chemist, Alden Mills,
New Orleans, La.

(The foundation of COTTON'S service to the textile industries is in presenting an interchange of ideas. "Welcome, Mr. Hoffman. Come again.")

Young Like Old-Timer

"Such articles of management (Old-Timer on 'Methods of Working and Management') are of greater value to young men than those which are very technical. After all, technical education cannot overshadow years of experience. . . . I am a college man with a little more than a year and a half in the mill and I feel that Old-Timer's articles help every young man."

JOHN ALLEN

Kannapolis, N. C.

◆

Old-Timers in Industry

The statement of Mr. Allen in his tribute to Old-Timer as to the value of years of experience is especially interesting in view of the continuing discussion of workers over 40, or workers over 50, and it is interesting to note the importance that a big company like B. F. Goodrich of Akron, Ohio, places upon the length of service. Quoting from the *Goodrich Circle*—"The average age of the mne on our factory rolls is 42 years, and the average age of the women is 37 years.

"Over 1/5 of men are 50 years of age or older, while only 1/7 are under 30 years of age. Approximately 1/7 of our women are 45 years or older and only 1/9 are under 25 years of age."

◆

Cost Finding

"I am interested in obtaining information as to the various systems of cost finding in textile mills. I believe you ran a series of articles on this subject some time ago."

J. A. TOOLE

Manville Jenckes Corp.,
Manville, R. I.

(Articles carried recently in COTTON on cost subjects include "Out of the Depression", "Operating Standards", "Cost Application of Mill Expense", and "Comparing Balance Sheets".)

◆

Wool Goods for Zipper Jackets

"We are interested in obtaining information as to the source of supply of cotton and wool knit goods suitable for zipper jackets, such as are now on the market."

DIXIE MFG. CO.

Columbia, Tenn.

(The National Knitted Outerwear Association, 386 Fourth Ave., New York City, is in a position to supply information as to the specific products of their members and can furnish such information.

◆

Data on Textbooks

"I would like to get some information about the Text books referred to in the article by John Middleton, Page 53, January issue."

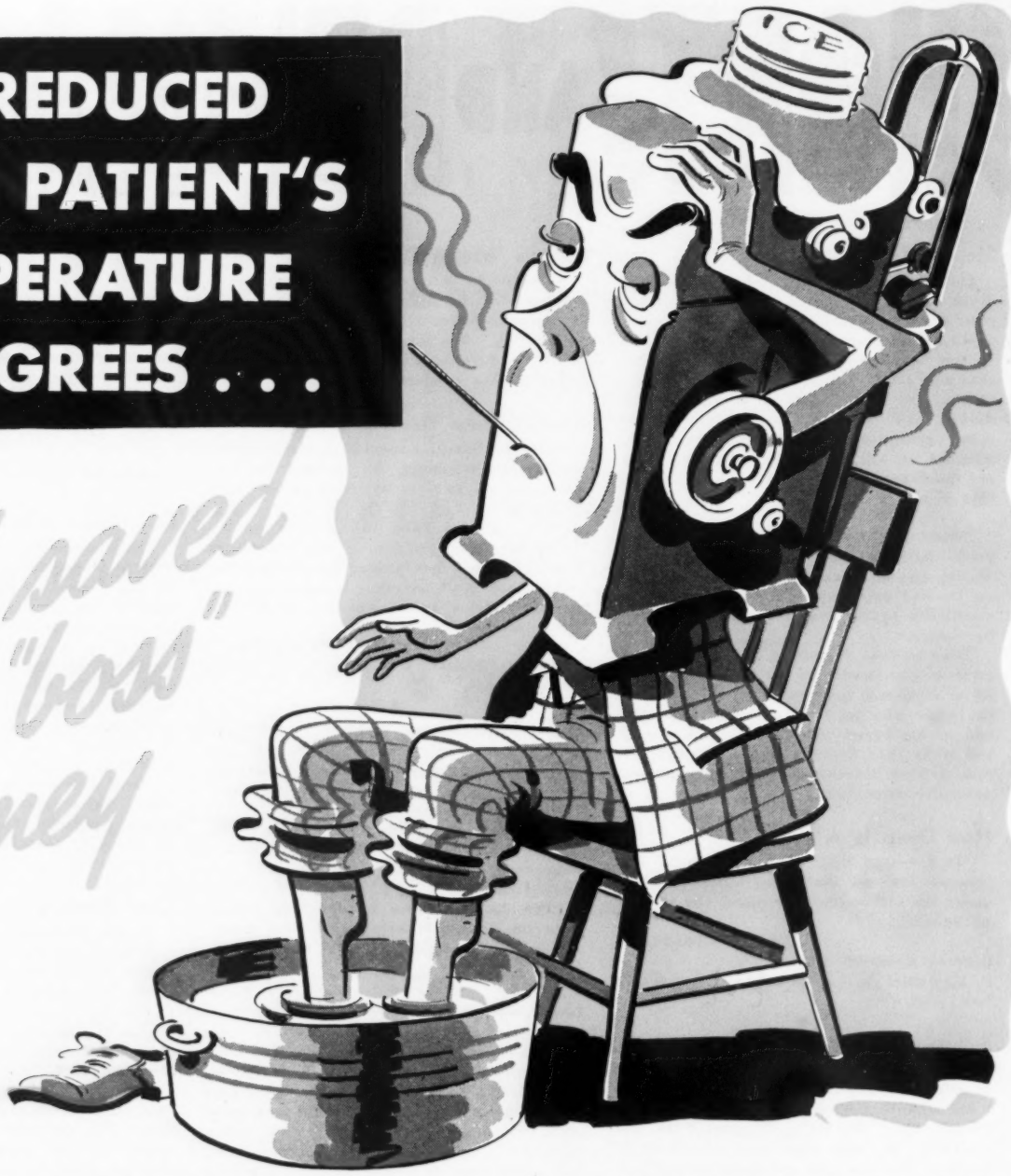
A. L. MORROW

Houston Textile Co.,
Houston, Texas.

(List of textbooks mentioned here used in two year advanced course in Chattahoochee Valley Textile Classes, available upon request.)

WE REDUCED THIS PATIENT'S TEMPERATURE 8 DEGREES . . .

and saved his "boss" money



"LET us actually *prove* to you that Shell Textile Lubricants can improve the operation of your machinery—and save you money," we asked Mr. John McGraw, Superintendent of the Seaming and Looping Department of the Hudson Silk Hosiery Co., Charlotte, N. C.

"Well," said Mr. McGraw, who heads the largest department of this type under one roof in the South, "we have no emergency problems, but we do feel that those seaming machines are running a little hot. You might see what you can do."

We went to work and inspected the machines—178 seamers and 112 loopers—with the seamers operating at a speed of 3400 R.P.M. We found the machines in top shape. Obviously, the temperature trouble lay in the lubricant.

We recommended Shell Textilis Oil of the proper grade. After a test run over a considerable period, the temperature of the oil in operation was 8 degrees cooler than the oil formerly used!

This Shell product has been in use now for over four months, and Mr. McGraw enthusiastically reports that the machines are not only cooler in operation, but are running more freely. Over a year's time this will mean a very definite saving in horsepower—*and dollars!*

So often power-stealing—*dollar-stealing*—lubrication problems may pass unnoticed until actual damage occurs. That's why it's just as much the job of Shell technical men to spot these hidden troubles as it is to correct faults where serious complications have already developed. It will pay you to call in a Shell representative today.

SHELL

SHELL TEXTILE LUBRICANTS

COTTON
SERVING THE
Textile Industries

June, 1939 Vol. 103 No. 6

Getting the Most Out of Textile Shows and Visits

THE GENERAL MANAGER of a group of mills on a very diversified line of products sent about 30 or 40 of his men down to the Southern Textile Exposition in Greenville this year. This entailed considerable expense, and the manager, being anxious to see what he had got for his company's money, got all the men together in conference the week after the show and put them through a sort of examination to find out what, if anything of value they had brought back from their visit to Greenville.

He has made available to us the minutes of this conference, and they are most interesting, and we believe that this gentleman has hit upon a most excellent idea not only for finding out what his men learned through their trip to the exposition, but for enabling the men to put this information in concrete, usable and profitable form.

Each man who attended the show had written a letter reporting on the things he saw at the textile show that had interested him, and listing in the order of importance those which he felt his company should seriously consider. A digest of these letters was prepared and was presented at the conference.

In the conference it was decided to lay out a theoretically perfect mill on paper, and then to discuss in the various items of the lay-out those recent improvements which had been particularly noticed at the textile exposition.

The next logical step was to see in what particulars this ideal mill differed from their own organization, and then to list in the order of their importance the items of new equipment which their own company needed and should consider.

Undoubtedly, this conference not only enabled the manager to get a comprehensive summary of what his principal assistants had seen at Greenville and what they were thinking about the things they had seen, but it also made it necessary for these assistants to do the thinking necessary to make the reports, and undoubtedly resulted in their getting a great deal more benefit from their trip than they would have if this conference had not been held.

It is an idea which we commend to other organizations for use after any textile exposition. If a concern goes to the expense of sending its men to the shows, they certainly hope to get some worthwhile return from the expenditure, and this looks like a first-class way of setting the men thinking about the practical applications of what they saw and of getting their thoughts into tangible form for the consideration of the management.

The same principle is equally applicable in connection with visits made by operating executives to other mills. Too often the fullest value of such trips is not realized because no one endeavors to organize and consolidate the informal views and impressions of the individuals, when a little formality in reporting and recording these observations and ideas should make available to everyone the reactions of each, and therefore add to the value of the visit for all concerned.

Can Textile Testing Be Standardized?

WE BELIEVE we can safely say that the textile industry is research conscious. Much of the operating executive's time is spent determining the best way to run his machinery, the supplies that are most suitable to use in his own plant, the adaptability of new equipment, why present equipment will not get greater production and make better quality goods, and the practicability of using various machine settings and raw materials.

All of this comes under the headings of research and testing.

But in almost every instance the tests carried out at one plant are not applicable to other mills. We all know why. There is nothing so variable as a textile mill. There is nothing so temperamental as running stock. Two plants running identical fabrics may have many different types of machines, accessories, and settings between the opener room and the cloth room.

If the mills could arrange some way to standardize tests throughout the plant, each plant would benefit by the testing experience of all others.

Take the simple test of determining the life of spinning rolls. Because of the variation in manufacturing procedure or the conditions within the plant, the life of rolls in one mill can hardly be compared on a fair basis with the life of rolls in another mill. There may be a difference in raw material, weight on the rolls, twist and condition of the roving, speeds, humidity, temperature, lubrication, etc. One mill may get 25 per cent longer life than another because of one or more of the foregoing conditions being handled just a trifle differently.

It would be helpful if the two mills could exchange information. But it would be of great value if this exchange were multiplied by many reports of such

(Continued on page 69)

The Mill Must Have Properly Ginned Cotton

By C. K. Cobb

General Superintendent, Canton (Ga.) Cotton Mills

THREE excellent articles have appeared in COTTON* in the last few years on the necessity for properly ginned cotton, and one would think that everything had been said on this subject, but often an important subject can change, and even if it does not change, it is well to repeat the essential factors occasionally. Conditions have changed a great deal since the other articles were written, and each change has magnified our need for better ginned staple.

For the last few years mill operators and executives have been keenly interested in better methods and types of machinery for cleaning and preparing cotton. State organizations have held many meetings in which the handling of cotton was the main topic of discussion. Many of the cotton mills in the South have spent thousands of dollars in recent years for new type openers, cleaners, and one-process pickers. All have been alert and anxious that the staple of the cotton be handled so that it is not cut, broken, or damaged in the cleaning process.

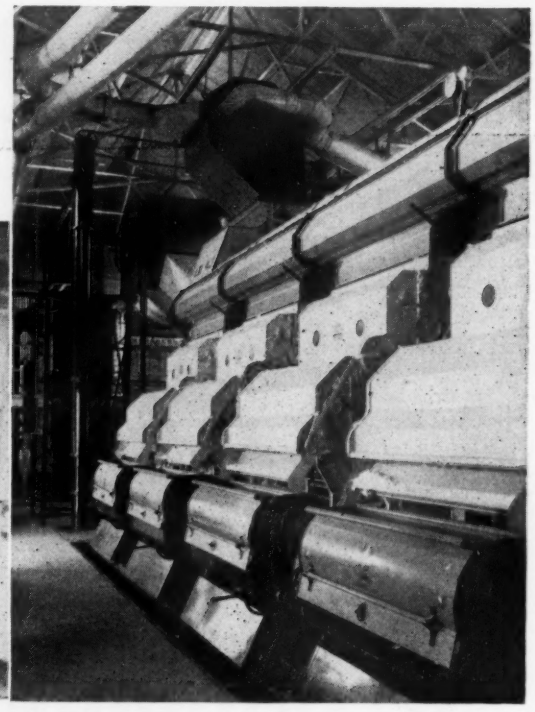
Why is not more thought and emphasis put upon the ginning of cotton? If the cotton is damaged or injured at the gin, no amount of high priced machinery in the cotton mill can correct it. The gin should be considered the first textile machine through which the cotton is run and mill men should see to it that this machinery is in keeping with other machines in their plants.

It is only within the past few years that North Georgia farmers have been improving their cotton seed. Ten to twelve years ago most all farmers in that section planted what was known as "Rucker" and "Half-and-Half" seed. These types were supposed to produce the most lint pounds per acre and probably did, but the staple was very short. The general staple length was ½-inch up to 15/16-inch, with over 50 per cent running ¾-inch or less.

When the mill of the Chicopee Manufacturing Corporation was built at Gainesville, Ga., in 1928 it required a longer type staple and in order to encourage farmers in North Georgia to raise better staple cotton, the company gave away several car loads of pedigreed cotton seed. The cotton from these seed brought a premium over the shorter staple and the farmers returned or paid back the seed which Chicopee let them have, and the mill sold these seed to other farmers and so on until several hundred farmers had benefited—and the process was a credit to the Chicopee organization. Today the average cotton raised in North Georgia is 15/16-inch staple or better.

*"Effects of Properly Ginned Cotton" by Robert W. Philip, April 1928; "Proper Ginning Improves Staple" by Hibbard S. Busby, February 1929; and "The Relation of Ginning to the Spinning Quality of Cotton" by H. H. Willis, January 1932.

The author submitted the picture below, which he made recently, as illustrating the type of gin referred to in his article. He points out the lack of drying, cleaning, extracting and pure seed facilities, and the fact that such conditions encourage dishonest practices and result in inferior cotton for the mill. The gin at the right (photo, courtesy U. S. Cotton Ginning Laboratories) shows a modern gin, including drying, cleaning, extracting, seed scales and pure seed handling equipment. Such modernization includes drier, screw distributors, extractor feeders, huller fronts and other appaatus which with seed scales give quality ginning . . .



It is not unusual to find a few bales there of 1⅛-inch staple. The premium which this cotton brings is an incentive to make all the farmers demand good seed to plant; and the shorter staple varieties are fast disappearing.

These changing conditions have not been sudden but have been steady and today there is a greater necessity for better ginning than ever before. The cotton mills have had to make many changes but to the

An antiquated, obsolete gin, all too common. Photo by the author . . . . . .

longer staple being available and these changes have been very expensive. What have the gins done to help meet the changing conditions?

A visit was recently made to a number of gins in one county in Georgia, and it is a crime how the majority of these gins are cutting and ruining the fine long fibers. No wonder the mills are having so much trouble trying to get uniform results when the staple has been damaged beyond repair before it reaches the mills. Only three out of twenty-four gins visited have been built within the past 12 years. Most of them have been operated 25 years or more and very few changes or improvements have been added.

Isn't it true that the longer staple cotton that is being sent to the gins now must be handled differently from the shorter type? Gins are very hard on cotton fiber at their best and will damage and cut some of the short type, but when a ginner runs a longer staple variety of cotton through his gin with the same settings and speeds as he uses on a very short staple different results are obtained. Should we blame the ginner? He has probably never been inside a cotton mill and has no idea what damage he is doing. The carder can tell him, though, and the carder probably curses in blue streaks, but such procedure is not getting us anywhere. The ginner is only interested in the ginning fee the farmer is paying him to gin his cotton and this is the same regardless of how he does it. If the staple is cut and ruined he never hears about it so why spend his good money on repairs and improvements. We must look to someone else if we expect to accomplish anything beneficial.

The cotton buyers judge largely on length of staple, color, and whether it is free from dirt and lint. Maybe to some extent on character and gin damage, but not as much attention is given this as should be. It may be of interest here to mention some of the characteristics of uplands cotton by The Universal Standard, and it will be noted that ginning is considered.

I. Middling Fair: Matured cotton, little or no imperfection, *ginning good*, white, high class of bloom showing to a possible cream, large leaf barely perceptible, clear cotton.

II. Strict Good Middling: Well matured cotton, *well ginned*, bloom white, or little light color showing, picked dry and *ginned dry*, large leaf, very small amount of little leaf.

III. Good Middling: *Well ginned*, leaf small or large, with very little of the latter showing, white bloom, or light tinge showing, the latter hardly perceptible.

IV. Strict Middling: *Well ginned*, white and some high color showing, *fairly free from gin cut*, small or large leaf but not over abundant, few naps.

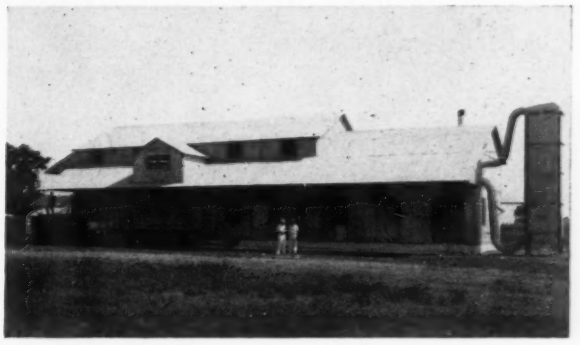
V. Middling: *Nearly free from gin cut*, white or creamy, *fair ginning*, some leaf, may have a few spots, reddish naps can show.

VI. Strict Low Middling: White, dingy, grayish. Some little yellow cast. *Gin cut observable*, some small and large leaf and some naps.

VII. Low Middling: *Somewhat gin cut*, white, dingy, grayish. May show some slightly reddish casts. Can carry some broken seed and naps and a small amount of motes.

VIII. Strict Low Middling: Small and large leaf. Naps. Reddish spots. *Gin cut slightly*. White, smoky, and dark. Broken pieces of hull, also yellowish cast and small amount of motes.

IX. Good Ordinary: Large and small leaf, sticks, small hulls, naps, gin cut, reddish spots. *Poor ginning*, smoky, cull, and dingy.



Exterior of a modern gin. Photo, courtesy U. S. Cotton Ginning Laboratories . . . . . .

When the farmer realizes that it is costing him good money because certain gins have ruined his cotton, he will look for another gin. In this way there will be an incentive on the ginner's part to keep up-to-date and something of real good will result.

In watching the grading of 100 bales of this year's local cotton crop, there were 18 bales of Middling and Strict Good Middling 15/16-inch or 1-inch cotton that had to have a large "X" put across the tag to show that the gin had damaged the staple to such an extent that the cotton must be run into the warp and not used for filling. This was 18 per cent of this particular lot of cotton that had been damaged in ginning.

Isn't it time the mills get together and try to create an interest in better ginning?

This article, or an article of this type, would do well if published in a paper going to the farmers and ginners. But since the mountain won't come to Mahomet, maybe Mahomet had better put out the fire, call the dogs and go to the mountain. If the farmers and ginners will not take action to see that the mills get cotton free from injury at the gins, only concerted action** by the manufacturers will guarantee this.

**The Department of Agriculture has published several studies on ginning that are helpful to the farmers and the ginners. If action by the manufacturers is to take place, it will be well to read these discussions so that the problem may be more intelligently discussed. They are: Nos. 1748, 467, 1802, 239, 393, 151. Order by number.

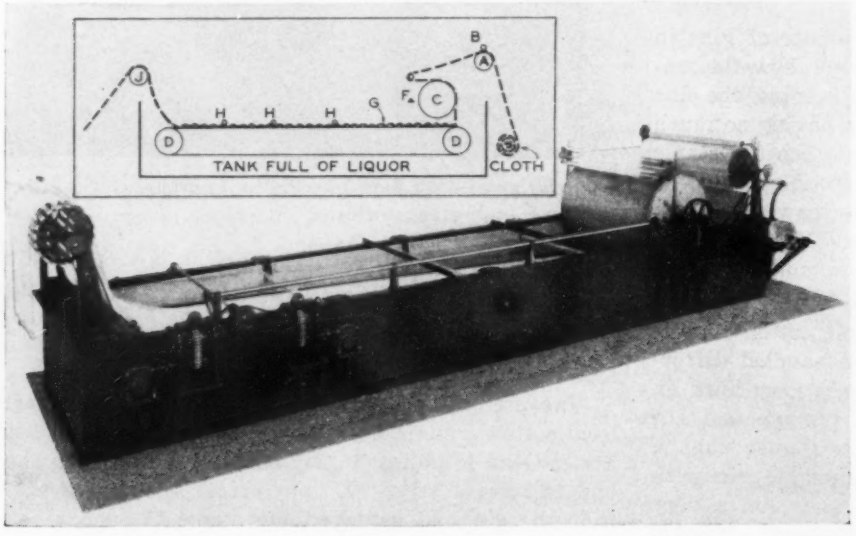
THE FINISHING OF SPUN RAYON FABRICS

By Eric Croen

SPUN RAYON is now being used in making a great variety of fabrics differing widely in construction and weight, ranging from woolly lightweights of 4-5 yards per pound to suitings of 1½-2 yards per pound. Most of these cloths are used for dress goods such as challies with a woolly finish, shirtings often smooth and silky, shantungs with slub threads to give a linen effect, and the heavier class and fancy weaves like gabardines and summer suitings, or hopsackings and homespuns with more tightly twisted threads, besides a great many novelties of all kinds of designs and price range.

Spun rayon products are excellent for designing and marketing because of their great pliability and good draping qualities; the soft and warm hand of spun rayon fabrics agreeable to the most delicate skin, approaching silk in this respect and in the pleasing appearance of the soft silky luster. It takes colors much brighter than cotton and even the whites are more brilliant. When mixed with other fibers, the range of new cloths and finishes is greatly increased while the cross-dye effects that can be produced with wool, silk, acetate and other rayons are many and beautiful. For instance, a brindle effect can be produced by a mixture of spun rayon of different deniers, say 1½ and 5½, because these dye light and dark due to different dyeing affinities.

In finishing, the good qualities of spun rayon should be considered and enhanced but it must be remembered, that like filament rayon, it is none too strong, especially when wet and can be easily distorted by excessive tension. The machinery used in handling it should be as smooth as possible because any undue rubbing or friction causes the tiny fibers to stick out, giving the fabric a hairiness or sleazy appearance quite undesirable in most cases. This defect becomes more apparent after several processes and every step should be carefully planned so that the cloth is treated as gently and quickly as possible.



Illustrations courtesy Van Vlaanderen Machine Co.

A full width wet-out and caustic unit, known as the initial wet treatment machine. A is idler roll; B device to make small nip and prevent slipping; C large metal drum which gives the drive; D net, which is driven and rises slightly towards outlet; F spray tc prevent cloth going around drum; G sheet of rubber forcing the cloth below the liquor; H rollers with same function as G; J driven delivery roll. C, D, and J are all driven with variable speed units.

In spite of its special qualities, spun rayon is often in competition with cotton fabrics and for this reason again the time and labor cost involved must be taken into consideration. The tendency is towards treatment by continuous methods but many mills do not have the equipment for this more economical handling but have to use the machinery on hand. Knowledge of the use of this machinery and experience in finishing many kinds of spun rayon fabrics are necessary in making every operation contribute towards the ultimate result.

It is not always possible to predict how certain grey goods will act under the particular plant conditions and so it is advisable to run samples or pieces along the regular processes, making variations at several places so that the final comparison points to the best method. Only a general outline of such methods can be given here but the lighter fabrics are usually easier and cheaper to processes in rope form during the scouring and dyeing, while heavier cloths should be handled entirely at the open width so that no breaks or creases give dyeing or finishing troubles.

Preparation for dyeing, printing, or finishing to follow, involves the removal of the size and other impurities put in during the manufacture of the fabric, and getting it into the cleanest and most absorbent condition. This is done by the "boil-off" or scouring

in alkaline soapy liquors during which the natural pliability and shrinkage become apparent. Before this important operation, other details must be considered.

After the usual marking of lots and sewing of ends, most goods are singed except those where a woolly effect is desirable as in challies and some shantungs. The same gas singers as for cotton cloths are used and this is often combined with a wet-out through enzyme solutions which loosen the size and dissolve the starches. Or the goods can be padded with such a solution and rolled or piled until ready to load in the machines for scouring. Often the starch is of such small amount that it does not injure the final finish and this de-sizing can be omitted; or if a gelatin size has been used, it is rather easily removed with warm water or during the boil-off.

Treating Greasy Fabric

Greasy yarns also have to be considered and often give much trouble. Cloths containing grease are first treated with a warm oxalic acid solution to dissolve the rust, and then scoured with fat solvents and soap. If still noticeable, the goods may have to be padded with such solvents, let lie or rolled up for some time, and then given another scouring.

If rope marks have been produced when dyeing the heavier grades on the reel or winch machine, these may be counteracted to some extent by letting the pieces lie in cold water in the becks several hours before sewing or scouring. Or the pieces may be strung up by the selvages and soaked in a large tub as for some crepes. If there is a tendency towards curled selvages or creasing, as with fabrics containing some wool, this can be overcome by treating with hot and cold water at this stage. The water should be somewhat hotter than any subsequent wet treatment so that all the tension is equalized. This can be done by running through the padder or on the jig, after which the cloth should be rolled up and left for an hour or two.

A treatment with caustic soda is considered beneficial for many kinds of fabrics and is necessary to get certain woolly or linen-like finishes. The alkaline solution swells the fibers, helps to shrink the cloth, increases the dye affinity, and acts on many impurities. Of course, mixtures containing animal or acetate fibers should not be so treated. Although usually padded in the grey state, the fabric must be dried if it has been previously de-sized, and sometimes it must be framed if badly creased. The caustic soda solution must be uniformly applied and in full width as dye streaks would result if put on in the rope state. The strength and temperature of the solution and the length of treatment vary considerably depending on the finish desired, the machinery involved and the opinion of the finisher. The gravity may vary from 1 degree to 8 degrees Tw., with 4 degrees as an average; the temperature from cold to hot, even to 180 degrees F.; and the time from a few minutes to some hours.

Heavy goods are treated on the jig preceding the scouring, an end or two. The operator must be cautioned against tight wind-up because the caustic swells the fibers enough to make the cloth press against itself and cause moire if care is not taken. This precaution must also be followed if goods padded with caustic are batched. Any drying out at the selvages should likewise be avoided as such dry places will dye darker. Any seepage of the liquor to the bottom of the roll must be prevented by keeping it in motion on the jig or changing its position periodically if not processed for some time. Lighter grades may be wet out with the caustic solution, allowed to lay in a J-box, and loaded into the reel machine all in one operation. Or they may be treated on the creping machine where the goods are padded with the caustic and allowed to drop full width on a slowly moving belt. The amount of piling and the speed of the machine controls the length of treatment. Such a machine lends itself to even more continuous operation if run in tandem with two large rope washers (similar to the reel machines) having many compartments and a counterflow of liquors where the cloth can be treated continuously in rope form, the whole scouring operation taking an hour or less.

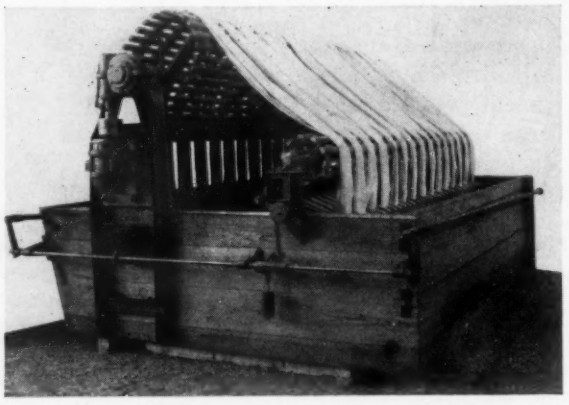
Because an excess of alkali may harshen the goods or produce an uneven dyeing, the caustic and the impurities it loosened are rinsed off. Next all spun rayon fabrics are given the hot soap boil-off. Olive oil soap is excellent to use but other low titer soaps of good rinsibility are satisfactory. About .5 per cent solution is made up and is used along with half as much alkali in the form of soda ash or tri-sodium phosphate and such other assistants as have been found useful. Where wool or acetate are present, ammonia should be substituted as it is a much milder alkali and the temperature reduced to about 160 degrees F. for spun rayon-wool, and not over 180 degrees F. where there is acetate. This scouring should be for an hour or until the cloth is clean and it is better at a boil for fabrics having cotton. The goods are then given a hot and cold rinse to remove the soap and dirt loosened.

The boil-off on the reel or winch machines gives the most shrinkage and the best hand but its production is low and intermittent compared with the continuous method outlined previously. For dyeing, they also give better shading and penetration. The tubs or becks should be of the low shallow type with the proper slant in the back to prevent the goods from piling. The jigs are used for the scouring and dyeing of the heavier grades and should be the frictionless type or the operator must be trained to control the tension carefully so as not to take the body out of the goods. Spreader bars sometimes cause side shading and for some cloth need not be used. It is of great advantage to have all such machines lined with stainless steel, Monel metal, or some such material because of the ease in cleaning and the smooth surfaces lessen the chance to roughen the goods as previously mentioned.

The goods are bleached when for plain whites, or for dyeing light shades, or if to be printed with white discharges. For large runs, the usual chlorine bleach using chemic is cheaper. Mixtures with cotton can be bleached at higher temperatures using hydrogen peroxide, as this removes the motes much better than chemic. Peroxide bleach also clears "smoky"

yarns much better and is invariably used when wool or silk are present. The methods and amounts are similar to those used for filament rayon and need not be detailed here. A better and more permanent white is produced if the goods are given a sour after the rinse following the bleach. A warm weak oxalic acid treatment can be used, followed by several thorough rinses.

Dyeing is usually carried on in the same machines as used for scouring, the becks or the jigs, without unloading. If there are exceptions, the cloth is removed and dried; as when the shades are so light that they can be tinted in the finishing mixture, or when particularly uniform or well-penetrated work demands that the goods be first padded with color and the dyeing then finished on the jigs or becks with higher heat, salt, and longer time. Indigosols may be padded and then developed with the hot acid elsewhere. It is often cheaper to pad the developed colors, finish the dyeing by giving 2-3 hot salt rinses on the jig, as the time is reduced in half. Even the development of these colors can be reduced in time and cost if the yardage is large enough to buy equipment similar to large reel washers where it can be done continuously in rope form.



Latest type of wooden dye beck or dye reel that may be used on spun rayons . . .

The choice of the class of dye to be used depends on several things such as shade and depth to be produced, the fastness required, and the cost. Direct cotton colors are used for lighter shades and they are faster to light and to washing on spun rayon than on cotton. The dyer must have a thorough knowledge of their properties so that he can produce the fastness to light or perspiration or other properties that the customers require; and to be able to produce uniform, well-penetrated dyeings. The rate of exhaust of colors used in a mixture must be carefully considered as dyes indiscriminately mixed often lead to poor work. For instance, if a fast-to-light green shade is to be dyed, and a mixture of a Direct Fast Yellow 4GL type and Direct Fast Blue 4GL type is used, blotchy, uneven dyeings may result even when the dyebath is controlled. This is because the yellow dyes much faster than the blue and it penetrates quicker and better, dyeing the inside of tightly-woven places and along the selvage where the blue, being much slower, may only dye the outside. Some colors are much slower than this blue and may be 2000 times slower than others so the need for knowing the dye speeds can be seen. Other colors are very sensitive to salt and this should be added very slowly. On the other hand, many colors that cannot be used on filament rayon fabrics because of the warp streaks or the filling bars that might result can be used without this happening on spun rayon fabrics because of the thorough mixing.

Direct dyes are best applied at high temperatures as that always gives the best penetration. A small amount of soap (1 per cent) reduces the friction. The dyeing is carried on for 20 minutes on the beck or 2 ends on the jig before adding salt; it is gradually added over a period 2-3 times as long. Colors that have exhausted well and have been salted on (slowly enough not to prevent good penetration), are apt to be somewhat faster to washing and less likely to migrate during subsequent drying. After dyeing the goods are rinsed, extracted, opened and dried, and with direct colors this should be carried out as soon as possible so the selvages or other parts do not air-dry and make dark places. A low drying temperature is not only better for these colors but desirable for the quality of the spun rayon, as excessive heat often makes it harsh. A poor dyeing mixture will again cause trouble at this stage; for instance, if a brown mixture is used where the red component migrates easily, it will collect on the surface giving a streaky appearance.

For print goods and where better washing fastness is required, direct dyeing colors that can be afterwards developed are used. Developed dyes are not likely to be as fast to light in all cases and this must be considered. Other colors can be aftertreated with formaldehyde, especially blacks, to improve their wash fastness; and Para colors may also be used which can be after-treated with diazotized paranitraniline. A newer class which are being used on spun rayon fabrics especially when cross-dyed, are the Benzo Fast Copper colors which have good fastness to light, washing, and perspiration. Vat dyes and naphthol combinations are not often used, though they are much faster, as they involve many operations and careful control. The solubilized vat dyes, the Indigosols or Algosols, are finding their place because they are simple to apply and many have excellent fastness properties. In some cases, they can compete with developed shades because of the less time involved in dyeing them. All these colors are applied on spun rayon by methods long established with other rayon fabrics.

The choice of colors is more difficult and the control of dyeing has to be much more careful when the fabric contains spun rayon mixed with some other fiber where solid or contrasting effects are to be produced. Mixtures of spun rayon-wool are easiest dyed at the same time with direct or developed dyes for the former, neutral-dyeing acid dyes for the latter. Solid affects are obtained when the proper dyes are chosen and the temperature is kept at about 180 degrees F. Some dye makers are putting ready-made mixtures on the market for this purpose but the shade and effects may vary when the fabric contains different ratios of wool to spun rayon or when dyed at various temperatures. If the wool is to be undyed, the rayon colors must

(Continued on page 81)

Courtesy American Moistening Co.

Humidify the Cloth Room

• *Upon request of a mill executive to get him some up-to-date information on cloth room humidification,* COTTON *sent an inquiry to several men that have had experience on this subject. Four of the replies, two from well-known humidification engineers, and two from practical textile mill men, are published below. First we have the report of a humidification engineer:*

HUMIDIFYING in cloth rooms has become in the past few years standard practice and is today the rule rather than the exception. This statement must be qualified somewhat in that only infrequently is humidifying equipment found in finishing plant cloth rooms working with fancy or colored goods where the routine involves washing, tentering, sizing, etc. A standard atmospheric condition is not as important in this type plant because the fabric is mechanically treated to produce a required finish and weight.

Due to the fact that almost all fabrics arriving in the cloth room of a finishing plant come directly from tenter frames, can dryers or calenders, it is correct to assume that the goods are almost invariably abnormal as to proper moisture content. If the goods are inspected and then packed in this condition, they will undoubtedly arrive at the consumers in substantially the same condition. Dry cotton goods are stiff and harsh and do not have the good appearance or fele of similar materials in possession of a normal moisture content. Therefore, if premium is to be placed on quality, feel and general appearance of colored goods, humidification in finishing rooms is distinctly a necessary function in the manufacture of this class of fabric.

The average grey or plan goods cloth room is entirely a different problem as it is this type plant that must finish its product to relatively close specifications as to the weight of the cloth per unit of length. Underweight creates customer complaint or rejection; overweight means a definite loss to the mill. Correct weight to a narrow margin can be and is maintained by proper relative humidity conditions in the plain goods cloth room.

Cotton is a vegetable fiber—90 per cent cellulose and approximately 8 per cent water. The balance of the structure is composed of six or more mineral matters in minor quantities. A highly hygroscopic material, cotton readily gives up to or takes from the surrounding air the water or vapor in that air. Both in the bale as well as in the finished cloth, cotton should contain, in the proper percentage, this water or regain, which is a component part of the substance. The retention of this important constituent throughout the various manufacturing processes has been proven conducive to maximum production and superior quality. Humidifying systems, then, are at least partly designed to foster or supply this water requisite and assure the passage through the machines of a wholly natural fiber.

Cotton is delivered to the picker room in varying percentages of moisture content due to conditions under which it was previously handled. The picking process includes the handling of a great amount of air through the fans and as a consequence the finished lap rarely proceeds to the card room in perfect moisture condition. As the correct application of humidity to picker rooms involves the re-circulation of the air, a program not altogether universal as yet, the card room is generally considered the first stage for applying humidity.

In the card room the prime purpose is further cleaning, parallelization of fibers, and the insertion of slight twist preparatory to the spinning process. Spinning converts stranded cotton into yarn and in so doing the final twist is inserted. Looms ultimately produce the cloth to a predetermined weight.

In each of the processes correct and adequate humidification has been necessary to the production schedule and to the quality and strength of the finished product. Produced under proper atmospheric condi-

tions, the goods proceed to the cloth or finishing room correct as to appearance, strength, and weight. In this department, if the cloth is folded, inspected, and baled under adverse air and moisture conditions, the mill is really penalized at this final process, though otherwise properly equipped throughout the production departments.

Humidifying systems inject into the stock in process the standard regain determined as correct for that process. Machines are set to deliver a certain weight per yard or hank and this standard regain produced by the humidifying becomes a part of the weight calculation. Water quantity in the product is gradually built up as the stock passes through the mill. If cloth is packed under conditions that will not serve to maintain this allowable regain that has been forced into the product, then cloth slightly on the heavy side must be delivered to the cloth room. It is then quite apparent that inadequate humidity in the cloth room is expensive to the mill.

Assuming that cloth remains in the room from 12 to 36 hours, considerable weight loss can be attributed to a dry atmosphere. As the weight loss cannot be accurately predetermined, the result is unevenness in goods made to definite specifications. Further than that, undue width shrinkage is evident to a degree. This of course is more prevalent and more objectionable in some types of cloth constructions than it is in other constructions.

Controlled cloth room humidification per unit of area is probably the simplest and least expensive application possible in the average plant. Weave rooms and, particularly, spinning rooms require units of high evaporative capacity because of excessive heat generation. Cloth room heat generation in comparison with these departments is negligible, consequently a low evaporation produces desired results.

From the fact of lay-out simplicity the inference should not be drawn that an indifferent lay-out for this department is satisfactory or practical. On the contrary, unusual care should be used in the design of cloth room systems with especial attention given to automatic control allotment.

Without accurate control of the humidifiers operating in the lower temperatures in cloth rooms there is a tendency toward condensation as the air will not retain an indiscriminate amount of vapor placed into it. Automatic controls functioning properly will permit the proper amount of evaporation only; consequently wetting down is impossible. The average cloth room system should be designed to produce and maintain at all times a standard relative humidity; some mills maintain 70 per cent, others maintain standards of between 60 and 65 per cent. And this system is essential as a part of the complete regain program for the mill. The practice is a sound one when performed in conjunction with a balanced humidifying system throughout the plant.

• *A man in charge of research work for a large chain of mills, which have the cloth rooms equipped with adequate humidifying equipment, next gives his*

Report of Another Mill on Humidity in Cloth Room

(Also written in answer to the inquiry from COTTON on up-to-date methods of cloth room humidification.)

WHEN we started operating our cotton mill, we had what we believed to be a comp'ete humidification system for our carding department (exclusive of the picking), spinning, spooling, and weaving departments, but we did not humidify our cloth room. Since beginning operations we have been obliged to revise the original humidifier system in accordance with what we considered better practice.

Courtesy American Moistening Co.

Atomizer type humidifiers and automatic controls in southern colored goods mill . .

When the textile buyers' Specification "G" became effective February 7, 1934, regarding tolerances, deficiency limits, and allowances, including humidity tolerances, we found that we were deficient in our cloth shipments as we had only about 4 or 5 per cent moisture content remaining in our cloth when we were prepared to make a shipment.

This condition was not acceptable to the buyers on this Specification "G" requirement, so we humidified our cloth room, regulating the humidity with automatic controls. Since that time we have been in a position to follow the required specification of 70 degrees F. and keep the relative humidity to 65 per cent. This permits us to keep our cloth shipments to approximately 7 per cent regain.

We do not rely wholly on our automatic regulators but check our conditions daily in several sections of the room with a sling psychrometer. We have found that automatic controls, though fairly close to the figure which they represent, do not permit the humidifier to respond perfectly to the demands as recorded by the controls—hence the need for checking of these by hand becomes apparent.

When we receive our cotton and check the moisture content, we find by our laboratory tests that we are able to record the normal average moisture content of approximately 7½ per cent. Previous to the time that we equipped our cloth room with humidifiers and our cloth was baled with only 4 or 5 per cent of moisture, it was apparent to us that it would be absolutely essential for us to recover this spread; with the demands of Specification "G", we are now able to ship our cloth as required by the buyers.

Report of Another Humidification Engineer on Cloth Room

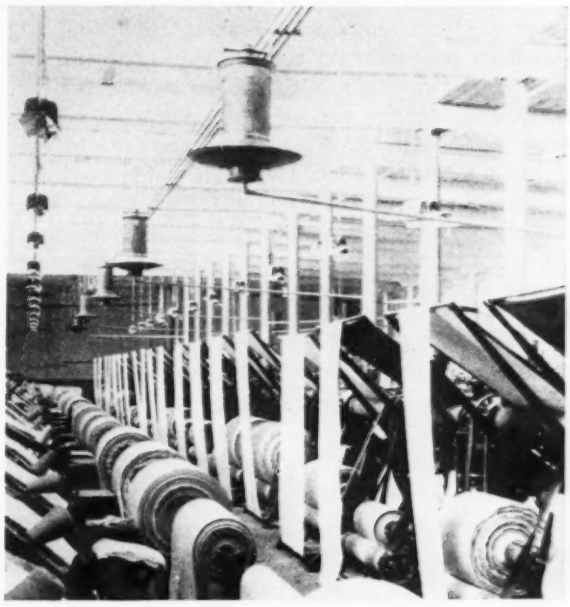
(Also written in answer to the inquiry from COTTON on up-to-date methods of cloth room humidification.)

THE advantages of maintaining properly controlled humidity in a cloth room are numerous, but space eliminates discussing the matter from a technical viewpoint. To cite something in concrete form, we will point to examples of what is being done in two southern mills.

Before equipping the cloth room in Mill "A" with humidification, it was found that the weight of the cloth from the weave room and baled cloth from the cloth room showed a loss of 3,900 pounds per month. After installing adequate humidification in the cloth room to maintain the regain in the cloth as it left the weave room, the differential was reduced to just over 900 pounds per month. This not only made a saving of 3,000 pounds of cloth per month, but it allowed the mill to reduce both the filling and warping one number.

Mill "B", running under similar conditions, reports it paid for the humidification system in the cloth room in just six months.

One of the great advantages in carrying a constant humidity in the cloth room is that it does away with the great variation in the cloth due to outside weather conditions. In hot, dry weather, without proper humidification the cloth runs light, thereby causing more raw stock to be added to the yarn in order to keep the cloth within weight limits. The discrepancy in weight is nothing more nor less than actual loss of moisture in un-humidified cloth rooms. But with proper humidification the changes made back in the preparatory processes would have been unnecessary.



High duty head humidifiers in cloth room of large southern print cloth plant . . . .

opinion and experience on the subject of humidification in the cloth room. He goes into the very practical side of the discussion, where it resolves itself into a question not only of operating conditions, but of profit and loss.

ANY ONE connected with cotton manufacturing has at one time or other run into the problem of "humidity", relative humidity, or to be more explicit, the relative amount of water vapor in the air in relation to the total amount of water vapor the air might hold at a given temperature before becoming saturated.

It has long been recognized as necessary to have some additional moisture in the air in rooms where cotton is being carded, spun, and woven. However, in departments where a definite amount of moisture in the air is not strictly necessary to promote better handling of the fibers the problem of humidity was, and still is, neglected or entirely disregarded. This has been true of opening rooms, picker rooms, parts of card rooms, spooling and warping departments, yarn storage rooms, tying-in rooms, and possibly more so than anywhere else, in the cloth room.

Before we go into the problem of where and how much humidity to have, let us see *why* humidity or as is now the term "air conditioning". Moisture in the air and in cotton fibers has several different effects. The main reason for moisture is that in limited amounts, moisture increases the breaking strength of fibers, renders them softer and more pliable, and reduces the tendency to generate static electricity charges which causes fibers to act like a cat's tail. It is for these reasons that some form of controlled moisture was introduced into carding, spinning, and weaving. For a long time other departments got along without humidity conditioning. Then came the depression and mill men began to count pennies and found they were losing money by buying cotton with 7 per cent to 10 per cent moisture content and selling cloth with moisture ranging from 4 per cent to 6 per cent. It then became obvious that in order to deliver the cloth with the proper regain or moisture content, controlled humidity would have to be continued from the weave room on through the cloth room in a grey goods mill where the finishing processes were carried out.

As the specifications began to be more strictly adhered to, the weight of the finished goods had to be closer to the line. There had to be some control on the moisture content of the finished goods in order to tell whether deviations from standard weights was due to moisture content, size content, or cotton content. As it is a difficult process to control the exact amount of size which goods pick up, the only course left is to standardize the moisture regain in the finished goods and balance variations of size or other causes by changes in the filling numbers. From this it is apparent that almost constant humidity must be maintained in the cloth room to get the desired results.

After it has been necessary to maintain a relative humidity in the cloth room of from 55 per cent to 65 per cent relative (roughly 7½ per cent to 8½ per cent regain in cotton cloth), there were complaints that this moisture in the air caused undesirable working conditions. This is true, as it is in the weave room, when dry bulb temperatures get up around 90 degrees F. If this room temperature is kept down to 78 degrees to 82 degrees F., the cloth will take up practically the same amount of moisture and at the same time give working conditions which are much more satisfactory.

Thus far the question has resolved itself into these lines of thought: Cloth must be handled under con-

ditions of definite moisture content in order to have a definite amount of moisture left in each piece. This moisture is supplied by most suitable means but due to heat produces oppressive working conditions. Then it becomes necessary to remove this heat. This can be done in two ways, either by vaporization or refrigeration. In the vaporization method use is made of the fact that when a liquid is vaporized in the air it takes up heat. If when enough water is vaporized in the air to give the required percentage relative humidity and the temperature is still too high, then it is not practical to put any more moisture in the air; the only thing left to do is to put some more air into the room. This incoming air, drawn in by fans, most likely will be cooler than the air in the room and in addition, will be lower in moisture content, thus allowing the humidifier heads to stay on for longer periods of time, or to run heavier capacities in order to bring up the moisture deficiency. This additional vaporization helps to absorb the excessive heat which is carried away by the finely divided drops of water.

In the refrigeration method the vaporizing is done by releasing through a small opening some compressed gas, such as ammonia or sulfur dioxide. This releasing is done in a closed coil which becomes very cold when the heat is removed from it. Later this gas is compressed where the heat is removed by running water or by external air cooling. With sufficient circulation of air around the cooling coils the air in the room is kept down to the proper temperature.

One point which is often confused is in assuming if the room has controlled heat or controlled moisture it is air conditioned. In order for a room to be *completely* air conditioned it must have some way of adding heat to and taking heat from the air. Also some means of adding moisture to and taking moisture from the air. In addition there must be some means of forcing filtered or washed air into the room in amounts sufficient for the needs of the occupants. *This* is air-conditioning.

Book Reviews

"Cotton From Raw Material to Finished Product"

The Cotton-Textile Institute, Inc., 320 Broadway, New York City, has prepared a 55-page book entitled *Cotton From Raw Material to Finished Product*, which also contains a supplement of 64 swatches of representative staple and industrial fabrics, with a still further supplement describing the specifications and uses of the various fabrics. Primarily the book is for the use of students, teachers and others who are interested in learning more about the process of cotton goods and manufacture, but there is much information that anyone interested in the textile industry will wish to have on hand. It treats cotton and cotton manufacturing in a comprehensive manner and represets a collection of interesting and valuable information on the characteristics of cotton, its growth, ginning and marketing, and the various processes through which it passes from the raw state to the finished product. The position of the cotton textile industry from a statistical standpoint is also reviewed. Containing the information that it does, COTTON recommends it for the library of schools, technical men, and textile executives. The price is 60 cents.

◆

Mattress Directory for 1939

Davison Publishing Company, Ridgewood, N. J., publishers of textile directories, has made available the *Davison's 1939 Mattress Directory*. It carries information and addresses of the manufacturers in the United States and Canada of mattresses, bedding, cushions, pillows and upholstered furniture, who use cotton felt, cotton batting, cotton waste, linters, hair, shoddy, jute fibers, kapok, excelsior, feathers, or moss. Another list contains makers of spring units, mattress batting, felt, shoddy and upholstery tow. This is the 27th annual edition. The 198-page directory sells for $4.00.

◆

Machinery Lubrication Charts

An interesting and helpful series of charts have been prepared by The Texas Company, 135 East 42nd St., New York City, giving lubrication recommendations for the type lubricant and the brand name of the company's product for application to machinery of the several machinery manufacturers. The charts take each machine manufacturer's equipment separately, giving the method (oil or grease) and type lubricant especially suitable for that particular machine and its component parts.

◆

"Handbook of Building Maintenance"

Flexrock Company, 23 & Manning Street, Philadelphia, Pa., is offering free to anyone interested in maintenance of buildings a new 60-page *Handbook of Building Maintenance.*

◆

"Machinery and the American Standard of Living"

Machinery and Allied Products Institute, 221 North LaSalle St., Chicago, Ill., has prepared an 88-page booklet, illustrated, giving the factual story of the contributions of technology to American civilization entitled *Machinery and the American Standard of Living.* Case studies are made and given to show that the machine age has placed with reach of the average man, articles which many years ago were too expensive to be used.

"Industrial Market Data Handbook"

The Department of Commerce, Washington, D. C., will release some time during July the *Industrial Market Data Handbook*, a 1,000-page publication which is the first marketing survey of American industry that has been presented in this form. It will contain complete figures on industrial production, employment, value of products, cost of material for fuel and power for more than 3,000 counties in the United States; similar data for every city of more than ten thousand population, and like information for each of 280 industries on a national rather than a county basis. It is a comprehensive co-operative study.

◆

"Microscopic Methods Used in Identifying Commercial Fibers"

The National Bureau of Standards of the Department of Commerce, Washington, D. C., has made available Circular C423, which is entitled *Microscopic Methods Used in Identifying Commercial Fibers.* It gives the procedure for performing such identification tests as recognized by this Department.

◆

"How to Instruct"

How to Instruct is the name of a short but informative booklet as reprinted from *Management Information*, a weekly bulletin for department heads, supervisors, and foremen. Single copies sell for 12 cents but quantity orders get a reduced rate. It may be secured from Elliott Service Company, Inc., 219 East 44th St., New York City. Another publication by the same company, which should prove helpful to supervisors in textile plants is *How to Manage*, a 22-page booklet selling at the same price.

THE JACQUARD LOOM

By James A. Ward

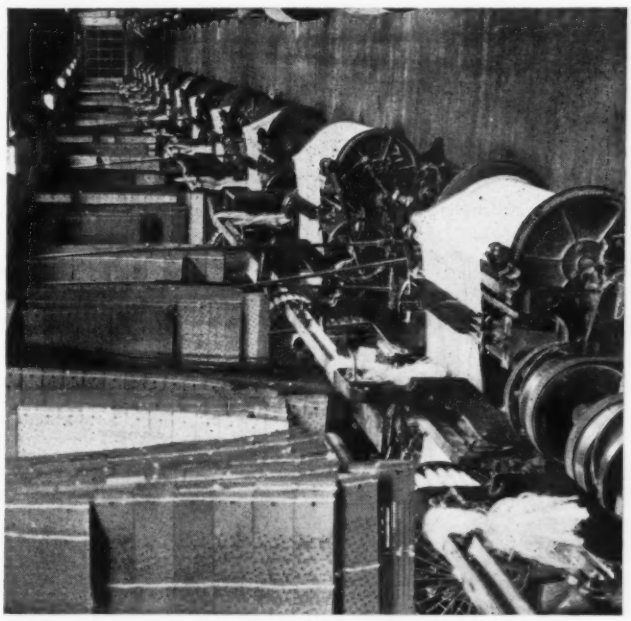
(Article 1)

SUPPLYING a long-felt need for a discussion of the subject, the author of this series, of which this article is the first, takes up the study of the Jacquard, its history, functions, types, and motions. This article prepares the reader for the practical discussions to follow . . . . . .

THE DRAW-LOOM represents perhaps the first real known attempt to figure weaving beyond the reach of treadles and heddles, and tradition points to its use in France and Holland during the 15th century. In its initial stage two persons were required to operate it—the draw-boy to raise and depress the heddles or harness as required, and the weaver to take care of the other two motions—picking and beating up. During the 16th and 17th centuries it became evident by the growing demand for variety of pattern that some mechanical means must be devised to assist the draw-boy. Many contrivances were conceived in order to attain this object, and to relieve the weaver of much physical and mental effort in producing special weaves and figured patterns. The most important of these, the "parrot, or pecker", was a small apparatus placed on one side of the loom, and brought into general use about the year 1807. The draw-loom was used for many years after the introduction of the Jacquard machine, or French draw-loom, as it was first called.

Contemporaneous with the draw-loom was the system of figure weaving known as "pressure-harness". The chief features of this system of weaving are: the warp was drawn through the harness in groups of five (for a five-end weave, or twill) and eight (for an eight-end twill), afterwards the same threads were separated and individually passed through greatly enlarged eyes in the heddles. The Jacquard harness and heddles are operating upon the same warp threads, but performing distinctive duties.

The function of the harness was to form the pattern by lifting the warp threads for the required mass of figure in multiples of five or eight according to the number drawn through each harness mail-eye. The heddles served to break these groups of threads into a detail of intersection, represented by either a sateen or twill weave. During the period that weavers were engaged in improving the shedding mechanism for producing figured effects in woven cloth the French weavers were similarly engaged in developing and perfecting machinery for the same purpose, which efforts finally resulted in the Jacquard machine. The first improvement of any real importance in the draw-loom was evolved by M. Bouchon in 1725. He introduced the idea of a perforated band of paper according to pattern. The length of the paper roll was determined by the number of picks in each repeat of pattern, and was punched by hand in sections, each of which represented a warp thread.

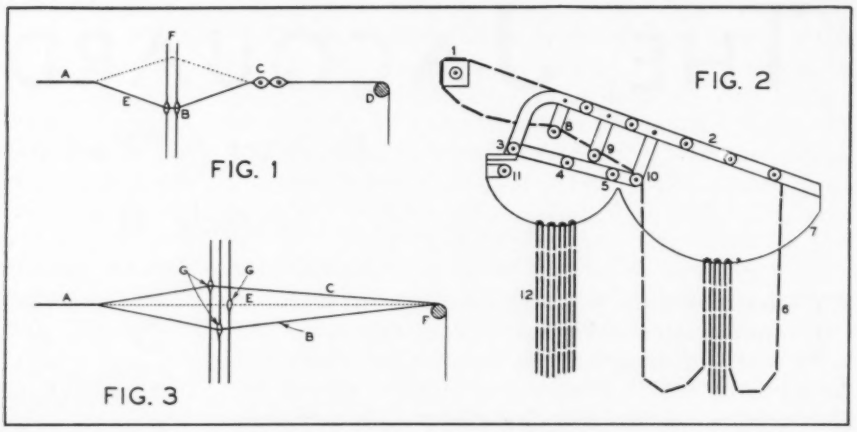


This type of Jacquard consisted of but one row of needles; the hooks were connected by neck-cords in the usual manner. Some few years later M. Falcon, a French mechanic, arranged the needles in four rows instead of one as in Bouchon's machine, which arrangement considerably increased the figuring capacity. Falcon also applied the idea of a square cylinder, and pasteboard cards instead of the continuous roll of perforated paper, one card for each figuring pick.

The cards were laced into an endless chain, which together with the square cylinder are retained in the modern Jacquard. With this latter type of draw-loom any desired variety of effect of warp shedding could be obtained compatible with the capacity of the shedding apparatus. M. Jacques de Vaucanson, a skilled mechanic, as a result of continuous study and close application succeeded in combining the apparatus of Bouchon and Falcon, and operated them from the loom directly above the harness, instead of as previously a considerable distance from it on the long tail-cords, and through them on the harness.

Jacquard was born in Lyons, France on the

7th of July, 1752, of humble parents, and died August 7, 1834, near to his native city. In 1801 Jacquard completed his first model, which was exhibited at the National Exposition, Paris. For the success of his invention he received a bronze medal, an annuity of 1500 francs, and a cash royalty of 50 francs for each machine sold.



Briefly, Jacquard's machine was designed on the same lines as his predecessors, was simple in detail, and economized in space as compared with the common draw-loom, and proved so practical in working as to meet universal adoption. The introduction of Jacquard's first machines into actual work was much resented by the weavers of his day, and as happened with other textile inventions, they were pulled down and destroyed by ill-informed, superstitious and infuriated mobs. Little did such people realize that more often than not good and practicable inventions mean greater cheapness in production, and therefore create a greater demand for the goods produced, resulting in increased employment. Near to the place where his first machine was burned a statue of M. Jacquard was erected. Jacquard's machine had the individual paper cards and the square cylinder, bored for eight rows of needles. This machine is thought by some to give to the cloth the soft feeling which characterizes the hand-loom product. Today it is principally used in hand-looms and in power looms for figured goods such as silk brocades, which do not call for a fast-running loom. Good results are seldom obtainable above 120 picks per minute.

The Single-Lift Jacquard

The present single-lift machine may be said to retain the main features of the original invention, though various improvements are constantly being made. This type of machine requires a stronger warp thread than the double-lift, since the warp must travel faster. Therefore, in a loom having a 3-inch shed, formed by the warp for the passage of the shuttle, and having farther to go in a given time it must travel twice the full distance of the shed or the opening the warp would travel 6 inches for each pick, while in the double-lift machine it would only travel one and a half times the depth of the shed, or 4½ inches for each pick. Again, since in the single-lift machine the weft or filling is driven into a crossed or closed shed, and therefore cannot recede from the fell of the cloth, it is more difficult for the loom to drive home the filling.

Fig. 1 shows the stationary or normal position of the warp threads when the shed is closed, and to which the warp threads return before and after the insertion of each pick of filling. Closed shedding is so called because all the warp threads are placed in the same plane at the completion of each pick of filling, irrespective of the position they may occupy in succeeding picks. In Fig. 1, A indicates the fell of the cloth or transverse section through the filling; B, harness mails; C, lease-rods; D, whip-roller; E, warp threads; F, heddles or harness.

Double-Lift Jacquards

In the double-lift type of machine there are two classes: (1) Double-lift single cylinder. (2) Double-lift double cylinder. Each type of machine has its advantages. (1) The double-lift single cylinder is the simpler machine, having only one set of needles, with two hooks to each needle, and but one cylinder. Here all the pattern cards being on one side of the Jacquard, the cards cannot get out of their consecutive order, a trouble met with in the double-cylinder machine. The weaver is free to pick out all cloth defects, since, after first drawing the loom into position the cards can easily and quickly be reversed, thus avoiding a break in either pattern or twill. The arrangement for reversing the cylinder is a very simple one and consists of a pushing catch extending from front to back of the machine, and actuated by a bell crank lever, pivoted on a stud at the back of the Jacquard. A heavy cord is suspended from one end of the bell-crank lever to within control of the weaver. A shoulder on top of the pushing catch is provided to simultaneously raise the top catch or cylinder hook out of action whenever the catch is made to travel towards the card cylinder for the purpose of reversing it. This machine, therefore, is best for small patterns, such as squares, shamrocks, spots, and diagonal stripes. Although the card cylinder travels twice the speed of the double-acting machine, no difficulty is experienced in keeping the pattern cards from jumping off the cylinder pegs. Even the largest of these machines, having a 12-row cylinder, can be run up to a speed of 150 picks per minute with excellent results. Another distinct advantage of this machine is that where card space is very limited, the cards instead of being hung over the back or front of the loom may be hung over the side. The only alteration necessary is to give the harness a quarter turn between the Jacquard and the comberboard. In very wide looms this plan is not advisable as the quarter turn, particularly in the borders, may sometimes prevent the harness from dropping fast enough. But no difficulty is ever experienced in narrow looms. This machine permits a choice of three methods of cross-border work. (1) Making up every individual card as in a napkin. (2) By using one repeat of cards and two cross-borders as in Fig.

2, which is a side view of this arrangement.

No. 1, the cylinder. 2 represents a series of rollers over which the cross-border cards 6 are drawn up, being returned to the card-slides over rollers 8, 9, and 10. The repeat or filling cards, 12, are drawn over rollers 3, 4, and 5, and returned to the slides over roller 11. No. 7 is the card slides, or card irons. To change from one set of cards to another, the cylinder is lifted out, withdrawn from one set and inserted in the other. (3) The third method has the same repeat arrangement as No. 2. But here only a single border is used, or half the amount of the cards described in the second method. This one border is worked forward and then reversed to its original position.

The Double-Lift Double Cylinder Jacquard

This Jacquard, it is claimed, serves more purposes than any other machine, and is the one most universally used. It is designed to produce a warp shed on the semi-open principle as shown in Fig. 3.

A, is a transverse section through the filling; B, indicates the permanent bottom line of warp; C, the upper line of warp. D, heddles or harness; E, the position to which the upper portion of warp C descends; F, the whip-roller; G, mail or heddle eyes. On reference to Fig. 1 it will be seen that, whereas in the single-lift machine the warp travels twice the distance of the shed opening, here it travels but one and a half times the distance, and in addition we have the rising shed acting as a counterpoise to the falling one, and vice-versa. Since in this machine the card cylinders are only required to operate on alternate picks, an increase of time is afforded for the rotation of the two cylinders, permitting a higher loom speed which was the original purpose of the designer. The double-lift single-cylinder machine gives the most excellent and practical results up to, and including, 140 picks per minute, and few, if any Jacquard looms, excluding those running napkins, exceed that speed. For quality the single cylinder machine is undoubtedly the better one; if quality is sacrificed for production, then the double cylinder. It has been claimed that the double cylinder machine necessitates fewer repairs and has a longer life in the Jacquard details and its connections, but this is a point which as yet remains unproved. One common disadvantage of the double-acting double cylinder machine is that the two sets of cards may get out of their consecutive order due to various causes, such as—the loom slamming or knocking-off; the weaver pushing back or reversing the loom; a long card wire getting underneath the cylinder hook; a hooked or burred end on a needle (this will lift the cards off the cylinder pegs, causing them to drop on the next square of the cylinder, where they continue to function, but are one card out of their consecutive order); the cylinder hook turning the cylinder before it is clear of the needles; a buckled card, as the cylinder commences to turn this will catch on the needles; and the lacing-tape becoming stretched around the corner of a card.

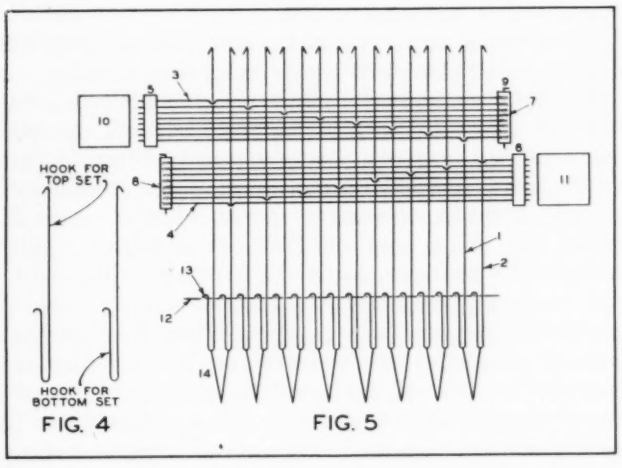


FIG. 4 FIG. 5

In this machine as shown in Fig. 4, the hooks for the top and bottom sets of needles are shaped differently.

Fig. 5 is a side view of an 8-row, or a 408-needle Jacquard showing one complete row of each set of hooks and needles, with transverse sections of the two-card cylinders. Nos. 1 and 2 are the hooks as shown in Fig. 4. Nos. 3 and 4 the upper and lower sets of needles. Nos. 5 and 6 the needle-plates, 7 and 8 springs; 9, a guide-pin passed through a retaining eye at the back end of the needle; 10 and 11, the card cylinders; 12, a guide grate for the hooks; 13 resting bars for hooks; and 14 neck-cords.

Some consider the top right-hand needle is number one, or the first needle of the Jacquard. In the United States the top left-hand needle is taken as the first one. It is of course possible to reverse the order of filling the Jacquard shown in Fig. 5 by placing the top needle of each set at the bottom, the others in consecutive order. This is sometimes done in error when re-filling the Jacquard. It of course destroys the sequence, and a machine so filled would require pattern cards in the ordinary way, i.e., with the numbers facing out from the cylinder, be woven upside down. But in some cases it may also necessitate a change in the loom harness. The usual method employed for cross-borderwork in this type of machine is to cut every individual card in the pattern and arrange them as in a napkin. But in an emergency, or through inadequate card space, cross-borders may be worked by using one repeat occupying the usual and upper position, with the cross-borders arranged immediately below. The card-slides carrying the repeats require being set wide enough to permit the cross-border cards with very short wires, to drop through. Long support wires in the repeat cards prevent them falling through the wider card-slides. In wiring the repeat cards, sufficient drop should be allowed to let the bottom of the cards come within reach of the weaver, permitting the cross-borders to be hooked on easily and quickly. With unusually extensive cross-borders this method is inadvisable, and in coarse goods, even in the two-loom system, it adds a considerable extra burden to the weaver.

(The next installment of the series on Jacquards will appear in an early issue. Save your copy of the magazine so that you will have the entire story.)

The Why and Wherefore of FABRIC DESIGNING

By T. O. Ott, Jr.

(Article 8)

The Chain Draft

THIS is the eighth installment of a series on designing written especially for "Cotton" by Mr. Ott. The series covers the fundamental principles of designing and in no way attempts to release specialty fabrics for production purposes. This article takes up the chain draft. As the series is drawing to a close, if there are special points you would like the author to discuss, he will be glad to do so upon request . . .

OF ALL THE ELEMENTS OF DESIGN the chain draft on design paper is the most interesting and instructive. It may well be termed the summary of the designer's work sheet which is presented in the chain draft. By having a thorough understanding of the make-up and relation of the chain draft to the weave and the drawing-in-draft many new designs may be composed by merely making up new chain drafts and running them off on the loom. In practice the good designer learns to take all the short cuts possible in order to turn out an acceptable quantity of work with the least expenditure of time and energy.

To understand the chain draft as usually shown we may define it as the representation of each separate interlacing of warp and filling on warp ends that interlace differently. *If the design shows more than one end interlacing alike then it need not be shown on the draft more than once in order to compose the chain draft.* This is graphically shown in Fig. 1.

In the mill, however, it is often more practical to show more than one end of the chain draft interlacing alike in order to make use of a standard draw already on the loom. Figure 2 shows a chain draft for a 16-harness draw where an eight harness weave is repeated twice, thus giving two ends alike for each end in the draft.

Whether the chain is laid out for the dobby head or the Gem or Cashmere head the draft will be the same. Now to the experienced and practical designer this makes little difference except in the instructions for building. The designer, to be consistent and clear, should lay out the draft so that looking down on the fabric on the loom the chain draft will look exactly the same as the weave in the cloth. Thus, if the weave is a twill line in the cloth then the twill line in the chain draft will run in the same direction. See the cloth and chain in Fig. 3.

Weaves that repeat on a number of picks less than 12 must be repeated twice in order to allow the dobby chain to go around the chain cylinder. The minimum number of picks may be shown but either the designer must show that the chain must be multiplied or else the chain builder must consider this. In most cases it is best for the designer to leave nothing to chance since so much work and material may be wasted by errors. A good way to show that the draft is to be multiplied is indicated in Fig. 4.

This leads up to the method of indicating to the chain builder where to start building the chain. A very useful method is to number each chain bar using No. 1 as the starting point on the draft and numbering each bar consecutively as shown in Fig. 5. This will serve as a check thus preventing the omission of a bar. Then in checking over the chain to locate an error the chain and chain draft may be readily matched up for examination. Often this is done without removing the chain from the cylinder.

From the practical point of view the designer usually makes two chain drafts, one for his files and one to work from at the loom. To save time the working draft is made out on large cross-section paper in pencil, the large paper being used to allow easy reading by the chain builder. It is often the case that an

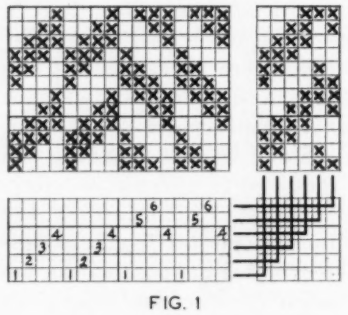


FIG. 1

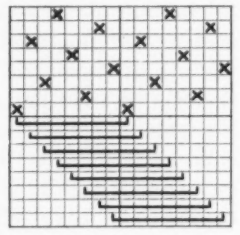


FIG. 2

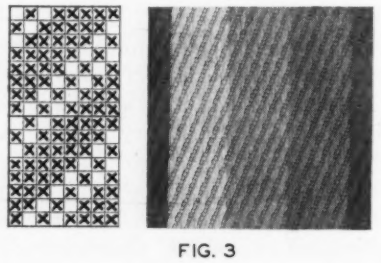


FIG. 3

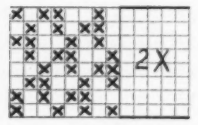


FIG. 4

The first article in the series appeared on page 56 of the January, 1938, issue; subsequent installments appeared on page 64, March, page 55, June, page 55, July, page 65, September, 1938, issues, page 62, January, 1939, and page 58, March, 1939, issues.

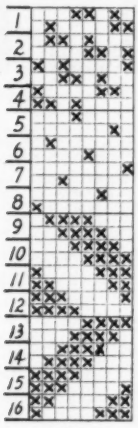
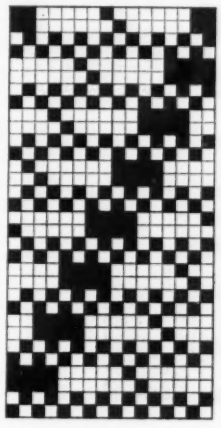


FIG. 5



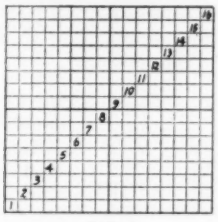
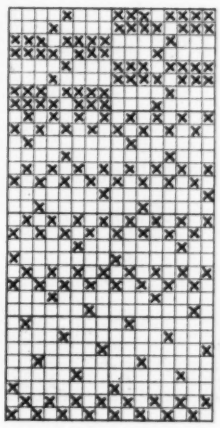


FIG. 6



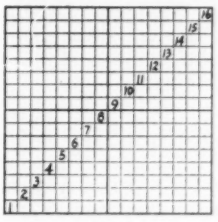


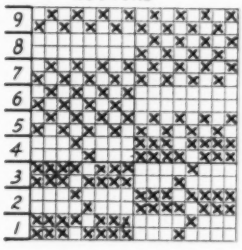
FIG. 7

STYLE B-4

20 H. DOBBY

C & K BOX

26 PICKS



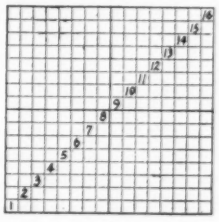


FIG. 8

inexperienced designer will send out working drafts on small paper that is hard on the eyes and allows error. The writer recommends nothing smaller than a one-inch square paper with 8x8 rulings for working drafts. The permanent draft to be kept in the files may be made more permanent by using India ink for the raisers and painting in on standard point paper. This may be filed or put on the same sheet as the design and drawing-in draft.

Now the designer should consider the fact that it is much easier to work out new designs where the drawing-in draft is simple. (On complicated draws the entire design may have to be painted in to see the effect.) To illustrate the possibilities of this method of working, two very different patterns have been worked out from the same 16-harness chain draft. See Figs. 6 and 7. This may be carried on indefinitely until the draw is changed to prevent too much sameness in the group of patterns. Different drawing-in drafts give characteristic results regardless of the difference in the chain drafts; however, for the beginner this need not be considered.

Another important consideration is the proper marking of the chain draft with all supplementary information so that the chain builder and loom fixer know exactly what to do and what materials to use in building a chain. Very often the writer has seen drafts made out by designers who have never considered the work to be done in executing the draft. Such information as: the type loom, the type harness chain, the number of bars needed, the pattern number, and the picks per inch are very useful when indicated on the chain draft. See model draft in Fig. 8.

The best way for the designer to understand how to present his work to the operatives is to make out a number of chain drafts, build them himself, and then start up and check the pattern on the loom. If the beginner will roll up his sleeves and not be afraid of a little grease and dirt he can learn a great deal from the people to whom he will later give his instructions. He can find the places where he can save them time and will learn to make his instructions clearer. This will be a clear indication to him as to the difference between theory and practice.

It is practical and possible for the experienced designer that knows how to give orders and understands the training of help to so interest the loom fixers and chain men that he can make many changes in design and loom set-up by verbal order only. This of course requires long experience in the mechanics of weaving on the loom and in the training of help, but it is something for the new man to strive to attain. Many excellent designers cannot work out patterns unless they have a pencil and paper handy. Some few, like the old craftsmen of 15th century Europe, can work as well in metal or draw up wonder sketches. In the last analysis the designer is at his best as a craftsman in the sense that those old masters were.

Can Textile Testing Be Standardized?

(Continued from page 55)

tests coming from the entire industry. Still we have the variable factor to contend with.

Applying the same principle to new machinery or appliances, several mills could run tests and report to the industry what might be expected as a performance from the new equipment. Again we have our factor of variation and the test will not give a true forecast of what might be expected from the same machinery in another plant because of different operating conditions.

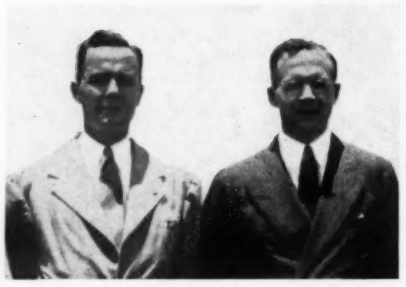
Perhaps there could be some standardization of testing methods, with a complete recording of all factors involved, so that the results of tests could be correlated and interpreted by other plants.

If this is done there will be untold savings to the industry. It is worth thinking about.

Can textile testing be standardized?

Georgia Mill Men Meet at Sea Island

Two stimulating addresses constructive officers' reports, delightful entertainment, perfect weather and setting, and a large and congenial attendance featured the 39th annual convention of the Cotton Manufacturers Association of Georgia, at Sea Island, Ga., May 25-26. Fuller E. Callaway, Jr., president of Callaway Mills, LaGrange, was in charge of the meeting as president, and, assisted by Secretary T. M. Forbes, provided a new standard of pleasure and value at this session of the association's "annual house party."



Left, Fuller E. Callaway, Jr., retiring president of the Cotton Manufacturers Association of Georgia; right, Theo. M. Forbes, the able secretary . . . . . .

Bob Arnold Made President

Robert O. Arnold, treasurer and general manager, Covington (Ga.) Mills, was elected president of the Association at this meeting, succeeding Mr. Callaway. John A. Miller, president of the Exposition Cotton Mills, Atlanta, was named vice-president, succeeding R. H. Freeman, chairman of the board, Newnan (Ga.) Cotton Mills, whose resignation as an association officer, due to ill health, was accepted with regret. George P. Swift, vice-president, Muscogee Mfg. Co., Columbus, Ga., succeeds Mr. Arnold as association treasurer. T. M. Forbes was re-elected as secretary.

The association, always definite and forceful on matters affecting its members, adopted a resolution opposing any further wage increases in the industry through governmental action; another opposed the projected changes in the cotton futures contract; a third opposed any form of export subsidy as a means of disposing of the prevailing government surplus of cotton. In another resolution, wired to Georgia representatives in Congress, the association urged equalizing amendments to the Wagner Act toward protection for employers and improvement of the administration of the law. A memorial to the memory of association members lost by death during the past year was adopted; and a special resolution of friendship and encouragement to Hill Freeman, in his effort to regain his health, was unanimously voted.

Callaway Proposes Sliding Scale Commissions for Sales

In presenting the annual address of the president at the opening session, Fuller Callaway analyzed the conditions of the Georgia textile industry as representative of the industry as a whole. He showed that while Georgia mills have paid to cotton farmers more than $45,000,000 for cotton, have paid 85,000 employees about $65,000,000 in wages, and have supplied the public with over 1,000,000,000 yards of cloth, "for our stockholders, those trusting men and women whose money we have used to accomplish these results, we have lost approximately $5,000,000; our stockholders, who have something over $200,000,000 invested in our industry, have been repaid for their confidence by a slap in the face."

Granting that the textile industry is sick, Mr. Callaway felt it incorrect to attribute its ailments wholly to outside influences, and adopted the unusual position of looking "inside our own industry for a possible reason why our mills lose money." With that approach, he recalled that in his address at New Orleans in April, before the American Cotton Manufacturers, he had discussed the need for merchandising research as well as technical research, and in this connection specifically suggested the relation between the mill and the selling agent as a point to be "researched". He there raised the question of whether the selling agent should not have more financial interest in the sales price.

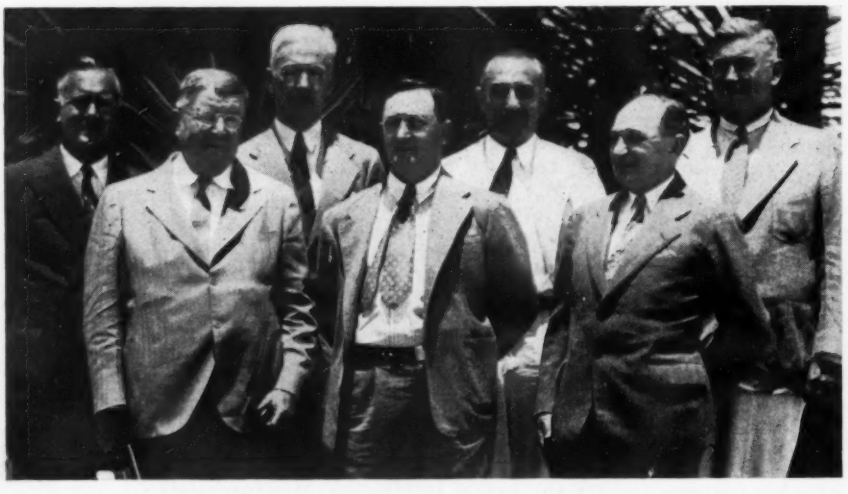
Mr. Callaway said that since that speech he had been swamped with comments, favorable and otherwise in reaction to his suggestion. Quoting some of these, he moved on to his own conviction, based on two facts: 1. the textile industry is the only industry of large proportions which depends for the distribution of its manufactured product upon agencies which have practically no financial interest in the price at which the goods are sold; and, 2, the textile industry as a whole is and has been for almost 20 years, so far as profits are concerned, in a "hell of a fix". In his opinion, the prime reason for lack of mill profits is the fact that the majority of the industry's staple goods are sold through agents who have almost no financial interest in the price the goods bring.

As a simple solution, permitting the selling agents to remain in the picture and also put the mills on a profitable basis, he offered the following proposal:

"Let the mill-selling agency contract be amended so that whereas a certain mill now pays its selling agent 4 per cent commission on all the goods sold, the mill would in future pay the selling agent 5 per cent commission on any sale made at a price above mill standard cost and the mill would pay the selling agent no commission on any sale made at or below mill standard cost. In other words, the mill would pay one per cent more selling commission on goods sold at a reasonable price and the selling agent would work free when he sold below standard cost. * * *

"Let the Cotton-Textile Institute and the merchants' association jointly employ expert cost accounting firms to calculate standard cost on all staple items and keep those figures up-to-date.. Let the mill and the selling agent in each case employ jointly a cost accounting firm to calculate the standard cost on specialties and keep them up-to-date."

BELOW, some past-presidents of the Georgia association who were at Sea Island. Left to right: Cason J. Callaway (1921-22); P. E. Glenn (1922-23); Paul K. McKenney (1937-38); W. H. Hightower (1927-28); Norman E. Elsas (1932-33); W. N. Banks (1936-37); and D. A. Jewell, Jr. (1930-31) . . .



Splendid Prizes for Golf Tournament

• **With the approval of the association's officers, a special committee secured funds for and provided a set of unusually attractive prizes for the golf tournament at the Georgia meeting at Sea Island last month. The funds were secured by contributions from non-mill men friends and guests of the association who regularly attend the association's meetings, and these contributions were made in appreciation of the association and its meetings, and the privilege of participating.**

An unprecedented number of mill men and visitors participated in the tournament. The prizes and the winners, announced and awarded at the banquet, were:

LOW NET FOR MILL MEN ONLY: Frank B. Williams, agent, West Point (Ga.) Mfg. Co. (This trophy is a silver urn, to be won three times for permanent possession; a small replica to be awarded to the winner each year for permanent possession.) 2ND LOW NET FOR MILL MEN: Ira A. McDaniel, assistant treasurer, Goodyear Clearwater Mills, Cartersville, Ga., Silver Irish bowl.

LOW GROSS, MILL MEN: George Hightower, Thomaston Cotton Mills, 14½-inch silver tray. 2ND LOW GROSS, MILL MEN: Ted I. Lewis, Callaway Mills, 10¾-inch silver tray.

LOW NET, GUESTS: Clyde Williams, First National Bank, Atlanta, Electric clock. 2ND LOW NET, GUESTS: J. R. Harris, Goodbody & Co., Atlanta, 10¾-inch silver tray.

LOW GROSS, ALL PARTICIPANTS: Tom A. Mott, Corn Products Sales Co., Greenville, S. C., Silver cocktail shaker set. 2ND LOW GROSS, ALL PARTICIPANTS: Charlie Thompson, Martha Mills, Cocktail shaker.

Special prizes were awarded as follows: LOW GROSS on PAR 3 HOLES, LaFayette Lanier, III, Riverdale, Ala., Golf umbrella; NEAREST PIN on No. 5 with TEE SHOT, Webb Durham, Foster Machine Co., LaGrange, Ga., Rain jacket; HIGH GROSS, George O. Jones, Callaway Mills, LaGrange, Zipper bag.

The golf committee consisted of: Chairman, I. C. Milner, vice-president, Gate City Cotton Mills, College Park; J. W. Stribling, Universal Winding Co., Atlanta; and Robert W. Philip, Editor COTTON, Atlanta.

Such a program, Mr. Callaway said, would mean more money for the selling agent as well as for the mill, would make all standard goods go on a profit-making price within two weeks time, would automatically adjust production to consumer requirements.

Mr. Callaway's recommendation at New Orleans in April that the cotton-textile industry raise a fund of $25,000,000 for research created industry-wide comment, and this subsequent recommendation on sales policy likewise became immediately the subject of specific and serious, as well as general discussion, from which some concrete steps may be taken shortly.

Conover on Industrial Relations

The guest speaker at the convention was William Conover, assistant director of industrial relations, U. S. Steel Corporation, Pittsburgh, Pa., who followed Mr. Callaway. Mr. Conover, whose thesis was that good industrial relations are by-products of good management, departed from his manuscript to speak informally and off-the-record to the cotton manufacturers. His paper, stripping "industrial relations" of the aura of mysticism and complications that some speakers seem to give it, declared that:

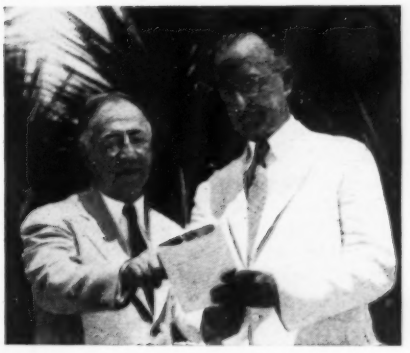
"Industrial relations and good management are one and the same thing. I know of no function, no activity, in industry which we can lay hold of and say definitely, 'This is the personnel function.' I know of no program, or programs, of activities which we can super-impose upon an employee body and say 'This is our industrial relations program.' Attempts were made, back in the early twenties, to make this artificial separation when paternalism, the personnel specialist, and the social service department were the vogue. In reality, there is very little which must be added to the management structure to assure good industrial relations. There should be no necessity for an elaborate and expensive industrial relations department.

"Good industrial relations is the result, not of the new things we do, but of the *way* we do *all* the things we are already doing; the *way* we set up our wage structure; the *way* we introduce changes in it; the *way* we handle cases of discipline; and the *way* we grant raises and make promotions and demotions. * * *

"Good management and good industrial relations are inseparable; they are one and the same thing. This becomes a matter of leadership. It is the *way* the foremen treat workers; the *way* the superintendent treats the foremen; and, finally, the *way* a president carries on with his own staff in order that right attitudes and right methods may exist throughout the whole organization."

The final feature of the first session was announced as an address on "The Federal Wage and Hour Act," by George O. Jones, of Callaway Mills, which turned out to be wholly a discussion of the changes in the Geegorian and Justinian calendars through the wages; a hilarious and unexpected and refreshing satire on the subject without discussion of which, said the president in introducing Mr. Jones, no meeting of manufacturers in May 1939 would be complete.

The association's annual golf tournament, results of which are reported in an adjoining column, was conducted on Thursday afternoon. At the annual banquet in the evening, entertainment was furnished by Harry Foster Welch ("Pop-Eye") famous comedian and imitator; golf prizes were awarded; and Retiring President Callaway was presented with a loving cup by W. H. Hightower on behalf of the association.



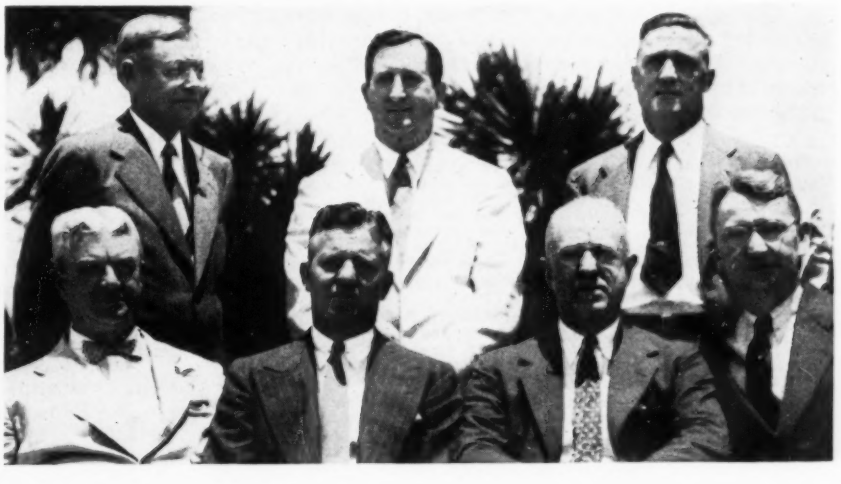
Right, R. O. Arnold, president-elect of the Georgia association, discussing the program with (left) J. A. Miller, the new vice-president . .

The final session on Friday morning was the business meeting, consisting principally of reports of officers and committee chairmen on matters of interest to the association and its members. These reports covered a year of productive activity by the secretary's office; the traffic committee; the office executives' division; the cotton buyers' division; the public relations committee; and the research committee. Allen Jones, superintendent, Muscogee Mfg. Co., Columbus, Ga., made a special report for the Textile Operating Executives of Georgia, of which he is general chairman.

Members elected to the board of directors of the association for three-year terms, in addition to the new officers already reported, included:

F. M. Arnall, president, Arnall Mills, Sargent, Ga.; R. D. Harvey, agent, Pepperell Mfg. Co., Lindale, Ga.; Julian T. Hightower, vice-president, Thomaston (Ga.) Cotton Mills; and D. A. Turner, president, Columbus (Ga.) Mfg. Co. To succeed W. D. Anderson and Lanier Branson, resigned. Scott Russell, executive vice-president, Bibb Mfg. Co., Macon, and S. H. Swint, president, Sibley-Enterprise Mills, Augusta, were named to the board.

BELOW, a group of Georgia association directors, snapped at Sea Island. Left to right, seated, Albert T. Matthews (life member); Frank B. Williams of West Point; Guy Parmenter of Goodyear Clearwater; Gordon Smith of U. S. Rubber. Standing: S. W. Thornton, of Hartwell; Julian Hightower of Thomaston; and Carl Milner of Gate City Cotton Mills . . . . . .



"Nine Old Textile Men" Discuss Spinning Room Problems

THE FOLLOWING STORY is a compilation of answers received from the operating executives of nine large southern textile mills, upon the request of the editors of COTTON. The original questions*, which it is not necessary to repeat verbatim, show the trend of thought in the operating of a textile plant today. The answers to them show practice in successfully operated mills. As the answers of necessity have been stated briefly, if there are questions concerning any particular phase of operations discussed, further information will be provided upon inquiry.

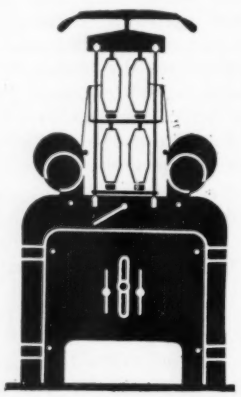
This is the second installment of the compilation, and discusses spinning, the first having appeared on page 69 of the May issue being a study of picking and card room problems.

The number before each answer is the identification of a certain mill's answer. Thus No. 3 is the same mill in each instance, though the answer to the question may have been omitted in certain cases.

Thin or Lightweight Spinning Tape.—1. Have used more than one brand and find satisfactory, with as long life as regular tape. Early experiment shows saving of 15 per cent in power. We run 14s and 16s warp with a spindle speed of 9,000 r.p.m. on 2-inch ring.

3. On 8,000 r.p.m. spindle speed get 10 per cent saving in power on 23s yarn, 2-inch rings, but find tape lasts only half life of heavy tape.

5. On 21s warp, 2-inch ring, speed 9,050 r.p.m., cylinder speed 1250; test showed 8 per cent reduction in horsepower consumption when using 50 yards per pound tape, with slight increase in spindle speed. On 56 yards per pound tape found 12 per cent reduction in power with two per cent increase in spindle speed. No figures on life of tape.



8. Using lightweight tape for year. No figures on life, but sure will last as long, if not longer, than heavy tape. On heavy tape had trouble with tapes jumping off when starting frame. Light tape almost eliminated this trouble. Saves power also. Spindle speed 7,000 r.p.m., ring 1⅜-inch, 22s yarn.

Sewing or Fastening Lightweight or Thin Tape.—1. We sew tapes, other methods being unsatisfactory: a 2-inch lap is taken and two seams are sewed on each side and across each end of the lap. Then a seam is run diagonally across from the corners. Tape ends are cut diagonally to about half-inch offset. Most breaks occur just outside of the laps, while few or no breaks occur as result of seams pulling out.

3. We use the lap splice on the tape and stitch out beyond either end of the lap, using several stitches diagonally from one end of the lap to the other end, never stitching crosswise as that practically cuts the tape in two.

5. Sew tapes with a 4-inch lap, using 20s/4 sewing thread, No. 16 needle. This is not entirely satisfactory. We sew regular tapes with joint, using 16s/4 sewing thread and No. 23 needle.

8. Best method we have found is to sew thin tape by making 1½-inch lap and use No. 40 linen thread.

9. From limited experience with lightweight tape, find best method for sewing is to sew the two ends together while tape is slack and thus allow the tape to flex easily. If tape is sewed together under tension a stiff place is formed in the tape which will not flex, and thus cause the tape to slip and jump when it goes around the whorl.

Excessive Lint in Spinning Room.—3. Caused by excessive draft on spinning frames; no remedy for prevention.

5. Caused by excessive draft, excessive speed, inadequate humidity, and too much reworked waste put back in work. We use oil spray on pickers to prevent lint.

6. To eliminate, use a more uniform running staple of cotton. Tell cotton buyer to use more care.

7. Short cotton, poor carding, excessive draft.

8. The length of draft has more to do with the amount of lint in the spinning room than anything else. This assumes correct card room practice. Heavier counts the more lint.

9. Some causes of lint: Inadequate humidity, which can be regulated by systematic checking of room at regular intervals; excessive reworking of stock, which should be regulated by a fixed method of reworking waste in a mix; where low mixes are run the excessive collection of lint may be remedied by use of oil on stock; also true for coarse numbers and where soft twist numbers are run.

Cleaning Ceiling when Running Three Shifts.—1. Clean overhead on week-ends.

2. Clean ceiling on Saturday with compressed air while the machines are idle. Best to have individual frame covers large enough to cover roving and yarn of each frame before blowing ceiling. Covers can be made from second quality cloth. If covers not used, loose lint falling on frames may be picked off by hand.

3. Use air pipe on ceiling every 24 hours.

5. Blow down overhead on Saturday.

6. Clean daily.

7. Clean overhead on week-ends.

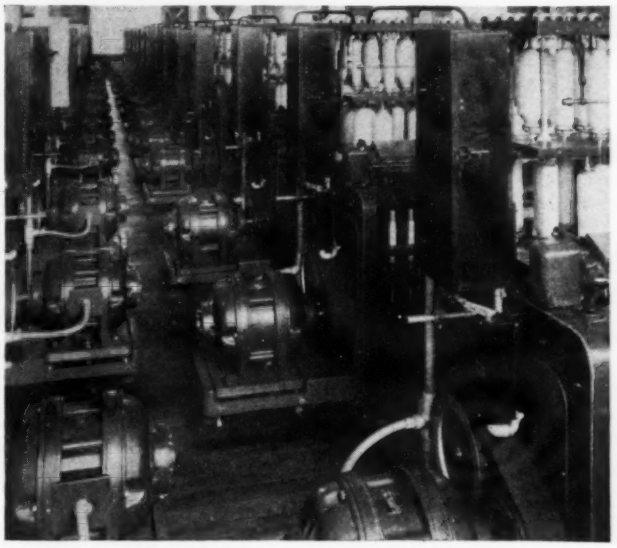
8. Clean with compressed air once week after mill is stopped for week-end.

9. Stop eight frames in sequence and blow off ceiling. Then start the first six frames back up and stop six more. In this way 8 frames are stopped during the entire blowing down of the room. Pur-

*When planning the discussion meeting of the Textile Operating Executives of Georgia, usually devoted to practical problems in the textile mill, it is customary to give each plant in the organization the privilege of submitting as many questions as it is interested in seeing discussed at the forthcoming meeting. From the many questions that are sent in by the mills, many of which are often duplicates, the executive committee of the organization selects the questions that will be most helpful and apply to the general run of plants within the group.

At the last meeting of this organization, March 11, the technical discussions were dispensed with and the subject of "Good Foremanship" and "Human Relations" was studied, through the medium of four forceful and well-versed speakers. A report of this meeting appears on page 68 of the May issue.

The questions for technical discussion had already been sent in to the executive committee, 56 of them, and so as not to disappoint anyone that had a question to be discussed, COTTON took the opportunity of requesting nine mill executives in the South to discuss the questions for the benefit of all. The answers to these questions is your story.



pose of only starting up six frames each time is to have two frames overlapping the six frames being blown off so that dust settling does not fall on a running frame. While the frames are stopped the rollers are picked and the floor is swept to prevent the traveling cleaner from blowing the lint up into the frame.

Compressed Air to Clean Spinning Frames.—2. We clean frames once a week with compressed air—on Saturday morning while machines are idle, so there is no chance of damage.

3. Compressed air used, blowing off five times per eight hours.

5. Compressed air used three times each week while machinery is stopped on third shift.

7. Compressed air used only for blowing off underneath spinning frames, on week-ends.

8. Compressed air used once weekly, stopping enough frames on each side of one being cleaned to prevent lint being spun in.

9. Compressed air used on spinning frames once each day or at end of shift. That is, if we run two shifts the frames are blown off once in 16 hours and if we run three shifts blown off once in 24 hours.

Type Overhead Cleaner in Use.—3. Ceiling type.

5. Find ceiling type satisfactory.

6. Ceiling type.

7. Ceiling type has advantages for keeping ceiling clean; creel type has advantages also as there is no overhead track.

9. Both types of overhead cleaners have some advantages. The creel type traveling cleaner is easy to keep clean and the rail is handy. The ceiling type cleaner makes a complete cycle which is better insofar as actual cleaning is concerned. The creel type goes over the identical path and does not make an orbit; we think this type does excessive cleaning in the same place.

Improvement in Yarn with Overhead Cleaners?—1. Experience with sample installation did not warrant further installation.

2. The quality of yarn is affected very little by overhead cleaners. Gouts may be reduced if roving pieces are not allowed to collect on top of creel. The overhead cleaner has a tendency to blow ends of these pieces down into the yarn.

3. We can notice an improvement in yarn by using the overhead cleaning system.

5. We see no improvement in the yarn with overhead cleaning.

6. Eliminates many gouts. Have speed enough to clean 12 frames every 4 minutes.

7. We note improvement in the yarn. Not as many gouts and slubs in yarn, providing cleaners do not cover too much territory. We get best results on 14s by having average speed of 60 feet per minute.

9. Since installing overhead cleaners we are getting better yarn than before. Noticed improvement insofar as linty yarn, pieces of trash, and droppings are concerned. Speed of traveling cleaner should be about 100 feet per minute.

Setting of Ring Traveler Cleaner in Novelty Mill.—1. We attempt to run most of our coarser numbers on certain frames and on these frames the cleaners are set for heavy travelers. When it is necessary to run finer numbers on these frames, the setting of the cleaners is not changed and the travelers are cleaned as well as possible by running a small hair brush against rings with frame running. Cleaners are pin type.

7. Set the traveler cleaner to take care of the largest circle traveler that is used.

9. When making a change of three to four numbers in a novelty goods mill the traveler cleaner should be moved back. This is important because the cleaner can distort the yarn in such a manner that the desired effect will not be made. On numbers from 3s to 20s the traveler cleaner will usually have to be moved farther from the ring than on finer numbers. We use the wire type cleaner on all our spinning.

Causes of Oily Filling.—5. Careless oiling and too soft a grease on the roll stands.

6. Too much oil on saddles and rolls.

7. Too much oil on roller stands and roller necks.

8. Excessive oiling of stands and top rollers.

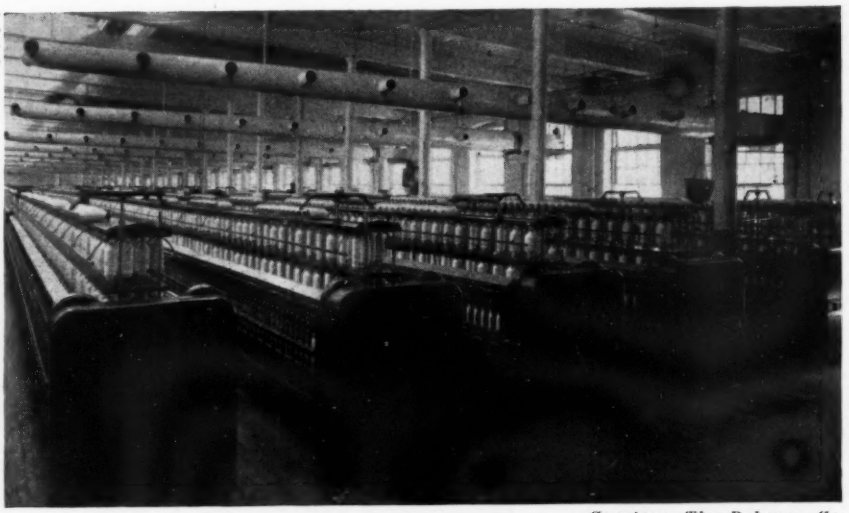
9. Some causes of oily filling: operators using black oil or grease on rings—spindle oil or mineral oil should be used. Cop rubbing the ringrail; the size package each frame is making should be checked at regular intervals to prevent this. Black oil or grease in the roving; this can usually be traced to some source in the card room. Carelessness on doffer's part in dropping yarn on the floor; train doffers and filling haulers. Dirty or oily rolls; a systematic schedule for cleaning both bottom and top rolls will eliminate this to a large extent. Oily gouts or waste in the yarn; frames must be blown off or wiped at regular intervals and the overhead cleaners must be running and in good condition. Cylinder bearings slinging oil; when a frame is overhauled the cylinder bearings should be checked and if they are worn excessively they should be replaced; a worn bearing will always sling oil.

Preventing Yarn Sloughing-Off on Cone Changes in Magazine Creel Using Wooden Cones.—6. Remove winder and cover.

7. We have not been able to eliminate all the causes, but we have cut our sloughing-off about 60 per cent by covering our cones with cork.

9. Yarn sloughing-off on cone-changes in a magazine creel, using wooden cones, running 14s yarn with a warper speed of 400 yards per minute can be prevented to a large extent by placing the cone on the arbor firmly; as it is started up on the winder then the yarn should begin winding on the butt of the cone drum. If this method is used, then when the change is made the yarn winds off smoothly from the butt of the cone and does not run out from the top of the cone and thereby slough-off.

Covering for Top Clearers; Practices.—1. On flat clearers we use No. 654 clearer cloth, weighing 18.2 ounces per square yard. Flat back clearers picked once daily. No longer have regular flat clearers but formerly they were picked at 45-minute intervals. On our revolving clearers we use a medium weight roller cloth (22 ounce) all wool white, and



Courtesy, The Bahnson Co.

pick once weekly. Running 14s and 16s from 1.00 hank roving, ⅞-inch Strict Low Middling cotton.

3. We use wool flannel for covering our revolving top clearers and we pick them every 24 hours.

5. Revolving top clearers are 16-ounce napped, cotton warp and wool filling, picked every 8 hours. Flat top clearers, 20-ounce unnapped, cotton warp and wool filling, picked every 8 hours. 10s to 21s warp yarn and 3s to 26s filling.

6. Pick clearers 4 times in 8 hours.

7. We use the best grade of clearer cloth on our flat clearers. Picking depends on the grade of cotton and the number of yarn and amount of draft.

8. Top clearers covered with wool blanket having long nap. 14s warp yarn, .83 hank roving, clearers cleaned every hour. On finer number with 1.20 and 1.37 hank roving we clean every two hours.

9. Use very harsh Brazilian woolen fabric for both flat and revolving clearers. Picked as follows: from 4s to 10s made from 1.00 hank roving are picked 4 times in 8 hours; from 10s to 23s made from 2.00 hank roving are picked twice in 8 hours. The revolving top clearers are usually cleaned about once a week, however, no regular cycle is used for doing this job and they may be cleaned oftener if needed. The foregoing schedule is based on Middling cotton. On lower grades of cotton more clearer picking is necessary.

Covering for Idle or Slip Roll on Long Draft.—1. We tried both calf and sheep skin. Thin parts of calf skin give rollers equally as good as sheep skin, and due to less tendency of calf skin to groove, we prefer it.

2. Leather is best for covering idle or slip roll.

3. and 8.—We use Koroseal.

5. On warp, felt base, use calf skin; on filling, naked base, use calf skin covering.

6. We use cork.

9. We use sheep skin.

Experience with Eclipse Bobbin Holders on Spinning.—1. They have a tendency to choke up and cause bad work; we prefer the regular skewers.

2. The new type eclipse bobbin holders seem to give very satisfactory results. The first ones made allowed the roving to run off too fast and many times bobbins would wind off the roving while frames were standing, caused by vibration of the mill. The new type has eliminated this trouble.

3. In tests on three frames the holders were not satisfactory.

9. Eclipse bobbin holders worked fine until the roving was about one-third full and then the roving pulling off of the bobbin at the bottom of the package had difficulty in unwinding thus causing the roving to stretch or to break back. The greatest strain is at the butt of the bobbin on the change.

Experience with Micarta Bushings.—3. They do not last long; we do use wooden bearings.

Effect of High and Low Roving Twist in Spinning.—2. High roving twist will cause the roving to pull through in lumps and ruin the rolls. Low twist causes weak and thin places in the yarn. The roving may be weakened by being pulled from the bobbin if the twist is too low.

3. Low twist is best for good running spinning.

5. High roving twist gives uneven drafting and is hard on the top rolls. Low roving twist breaks back in the creel.

7. Too much twist in roving will cause uneven drafting and cause thick and thin places in the yarn. It also will ruin a great many rollers. Not enough twist will cause thick and thin places in the yarn because of stretch in the roving.

8. Low twist roving will not only break back in the creel but will stretch excessively, thereby causing uneven yarn. High twist is hard to draft and will cause slugs in yarn by failing to draft.

9. High twist roving will cause lumpy yarn because the roving will not draft properly. Since twist runs to the thin places, numerous hard ends occur in high twist roving which gouts the rolls and ruins the rolls. Low twist in roving causes uneven yarn because of stretch.

Arrangement of Break Draft on Coarse and Fine Numbers.—3. We make no difference in break draft in coarse and fine numbers.

6. Not under 1.23 and not over 1.53.

8. Break draft setting made by machine company when building frame is more suitable for our yarn numbers than any we have been able to figure out. Break draft is 1.22 on numbers ranging from 2.75s to 32s.

9. On coarse numbers break draft of 1.25.

Practical to Run 4-Inch Gauge Spinning on Filling Build without Separators?—1. We run filling on 3-inch gauge without separators, but use them on 3-inch gauge warp. On the 4-inch gauge frame in question we think separators unnecessary if rings are not too large and if the correct travelers are used.

3. Yes, we think it practical to run 4-inch gauge frames without separators. Use a slightly heavier traveler and it will give a much firmer bobbin and better filling.

5. Yes. In the past we have run filling build on 3½-inch gauge frames without separators.

6. and 7. Yes.

8. It is practical even to run warp on 3¾-inch gauge frames without separators. We run filling numbers ranging from 2.75s to 27s on 2¾-inch gauge frames without separators.

9. It is our experience that up to 2½-inch rings on spinning frames with a 4-inch gauge on filling build it is not necessary to have separators if the frame is running at an average spindle speed.

Re-Buffing Koroseal Rolls on 6s and 8s.—1. The durability of the Koroseal roller depends upon the speeds run, setting of roving traverse, and the weight on the rollers. On 6s filling we have a front roll speed of 205 r.p.m., with 4-pound weights on the rollers. The roving traverse is 1 3/32-inch. We find our rollers will run from 12 to 14 months before

(Continued on page 112)

Importance and Means of Lubrication Discussed at Raleigh Meeting

THE EASTERN NORTH CAROLINA DIVISION of the Southern Textile Association held its regular spring meeting as guests of the textile school of N. C. State College, Raleigh, May 6, 1939. With excellent plans laid for discussion and a motion picture on the subject of lubrication, over 200 attended. J. L. James, superintendent, Erwin Cotton Mills Company, Plant No. 1, Durham, presided, being chairman of this division; he was ably assisted by George Gilliam, secretary, who is superintendent of the Sterling Cotton Mills, Franklinton, N. C.

The textile school of the college had its machinery operating for inspection by visiting mill men before and after the meeting. The group was welcomed by Thomas Nelson, dean of the textile school, and J. W. Harrelson, administrating dean of the entire college, who advised of a new textile school building being erected at the time and invited the members of the division back to Raleigh in the future.

Resolution of sympathy was adopted for the family of A. L. Agner of Erwin mills, who passed away since the last regular meeting.

Educational Film on Lubrication

The highlight of the meeting was the interesting and educational talking picture describing the elements of correct lubrication, released by Socony-Vacuum Oil Company, Inc. This show has been given on numerous occasions before other divisions of the Association, and as usual the comments denoted that it received rapt attention of the audience. It is a thorough analysis of the principles of correct lubrication, why lubrication is necessary, and the application of specific type lubricants to individual cases, and does not in any way, shape or form suggest the use of a particular brand of lubricant, but does forcefully point out the need for a thoughtful selection of all lubricants.

The chairman invited F. H. Trewin of Socony-Vacuum Oil Company, Inc., to furnish additional information concerning lubrication, who graciously responded and permitted himself to be questioned from the floor, giving his opinion on manufacturing details without the slightest suggestion of trade names being mentioned. He emphasized certain factors brought out in the talking picture, applying them to the textile industry specifically. He brought out that in many instances the application of lubricants is an individual plant problem and that no blanket rules could be laid down for the industry as a whole because of the variable element and differing operating conditions of each plant, such as speeds, size of packages, etc., the point driven home being that no matter what the conditions are, it is always necessary to cushion the bearing with a film of lubricant so as to eliminate any possible chance of metal-to-metal contact.

Taking up the problem of spinning, he advised that a great percentage of power is used in this department as compared with the remainder of the mill, and at this point especial care should be given to oiling so as to reduce, not only wear of machine parts, but the power cost. He told of research that has been and is done toward increasing the quality of oils.

The chairman requested Mr. Trewin to explain "viscosity" and "flash point." According to the speaker, viscosity is simply a relative measurement of the body of a lubricant at a certain given temperature, the scale by which the lubricating engineer can compare different weights of oils. It is the unit of measurement when a certain oil will flow through an orifice in a given length of time at a given temperature. He advised that the body of an oil changes with the temperature, and an oil with a certain flow at one temperature cannot have the same flow at a higher or lower temperature. "Flash point" is the engineers' term for the temperature at which an oil becomes vaporized so that when a flame is passed into its vapor, the vapor will become ignited. It is often used to identify a product when something other than petroleum is used as the base, the other substance often giving a different flash point.

Vary Viscosity of Spindle Oil with Weather

A question from the floor showed interest in the lubricating value of spindle oils of the same viscosity during the summer and winter, it being said that naturally the oil flows less freely in winter. Mr. Trewin said that there is possibly not as much protection from the same oil in winter as in the summer, assuming that the correct lubricant is being used in the summer in the first place. However, should the proper oil be used during the warmer months, in order to insure the same amount of protection during the winter, he

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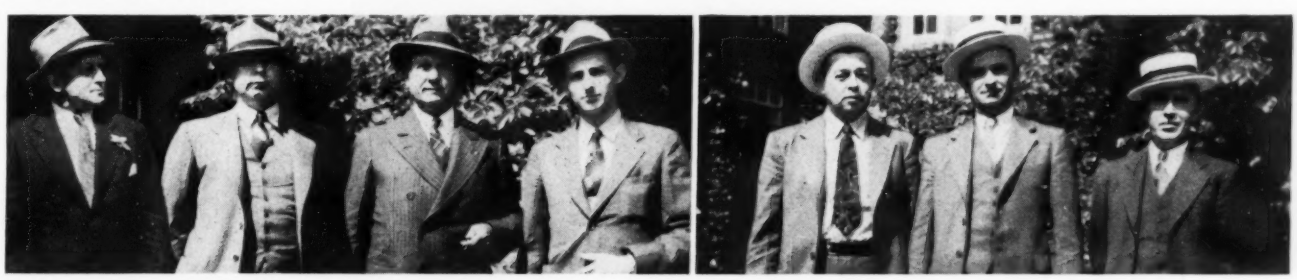
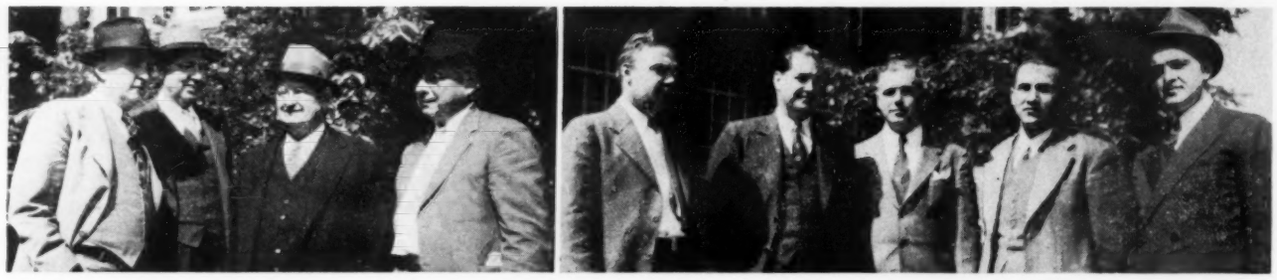
Report and Group Photographs by John C. Fonville



Left to right: George Gilliam, Sterling Cotton Mills, Franklinton, N. C., secretary of the division; Jesse James, Erwin No. 1, Durham, outgoing chairman of the division; Col. J. W. Harrelson, dean, N. C. State College, who spoke briefly at the meeting; C. L. Carrow, Erwin No. 1, Durham. The three gentlemen sporting new straw hats are L. R. Moody, R. H. Higgins, and C. G. Grant of the No. 1 Plant of Roanoke Mills, Roanoke Rapids, N. C.



Left to right: F. W. Carr, A. N. Woodruff, B. F. Aiken, and A. L. Oldham of Erwin (N. C.) Cotton Mills Company; A. R. Marley, Erwin Mill No. 6, Durham; P. B. Parks, Erwin (N. C.) Mills, chairman of the board of governors of the Southern Textile Association; M. R. Harden and Grady Lyon, both of Erwin No. 4, Durham; and Larry Taylor, southern agent of National Ring Traveler Company. Mr. Lyon was elected to the executive committee at the Raleigh meeting.

suggested the gradual addition of a slightly lighter oil in the cooler months, gradually tapering again to the heavier oil again for summer in order to give the same actual viscosity in the spindle base. He was quick to point out that even though the mill may be getting adequate protection during the winter months from the oil used during the summer, there is still the question of power costs and it is advisable to consider this along with the thought of lubricating value. (In certain cases oils may be twice as heavy during the winter as in summer)

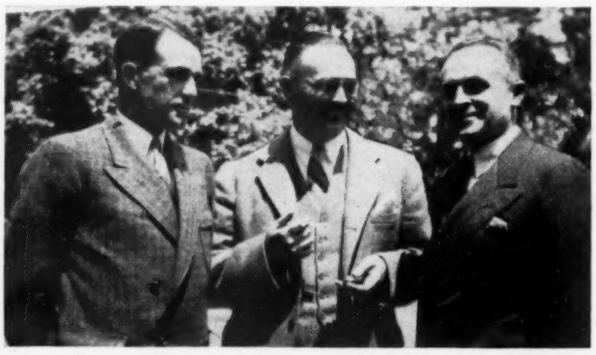
Since the inception of large packages, high speeds, etc., the manufacturers' recommendations are different from those of several years ago. In cases of wobbly spindles it is essential that a lubricant with increased viscosity be used to prevent excess vibration.

Another important point answered for an inquirer was that the temperature of the bolster does not vary as much as the temperature of the atmosphere.

Cleaning Spindle Bolsters

Another member requested information on methods of cleaning spindle bolsters, and asked for a solvent to use in removing sludge. Mr. Trewin considered the best way to handle cleaning the bolsters is to pump the old oil out, but in cases where sludge is obstinate and will not not loosen, he advised removing the bolster and washing and scrubbing with a brush in light oil, wiping clean afterward. On this method, he explained, precautions should be taken to get the *same* spindle and base back together again after cleaning.

The subject of using kerosene as a sludge solvent came up. Mr. Trewin forcefully advised against using it, though he admitted the mills probably would do so anyway, but said that if kerosene is used it should be thoroughly washed off with light oil before assembling the spindle and base as the kerosene is injurious to the metal and often removes certain elements in the metal that the machinery manufacturers have specifically put there for a purpose. Pressure from the floor was put on the speaker to name a solvent, and he finally said that though impractical to use in the textile mill, some concerns loosen sludge with a type of petroleum ether or chloroform; gasoline will remove the sludge but is injurious to metal and is too inflammable for textile use.



The lubricating film movie men. Above, left to right: Bruce Cotten, Carolina representative; F. H. Trewin and D. C. Decker of the Baltimore office of Socony-Vacuum Oil Co. Mr. Trewin led the discussion on lubrication by request of the chairman of the division.

In some cases soon after putting oil in overhauled spinning or replaced spindle parts, the oil becomes black. He maintained that the lubricant should not be condemned in such cases, but that this condition is only natural as there is a certain polishing taking place between the steel and cast iron material parts of the spindle assembly. However, the oil should be pumped out and fresh oil inserted in the base.

Correct Spindle Oil

"How can the mill men determine the best spindle oil to use?" was the next question. It was suggested that the machine builders' recommendations be followed, supplemented later if necessary by the recommendations of an oil manufacturer to suit the local conditions. For regular spinning, Mr. Trewin said, a light gravity oil of 60 seconds may be used, for long draft of high speeds and moderately large packages 80 second oil is recommended, and for the heavier packages about 100 second oil. For good operations he recommended an *operating* oil viscosity of 80 seconds.

When asked methods of running power tests on spinning with reference to type spindle oil to use, he said that this is very difficult to do because of the variables, and he advised against changing oils just because of the results of one power-saving test, rather taking the average over a period of time as a basis. He added in answer to a further question that even though the power test showed in favor of a certain lubricant, still the lubricant *might* not be giving adequate lubricating protection.

Some of the members brought up the question again of flushing the bases out, applying this to crank-cases of automobiles. Another member present said that often light oil is used and sometimes a flushing agent is put in the crankcase, but this is not advised as the flushing agent often gets in places in the oil lines and motor where it does not belong and remains there as a detriment to the machinery.

Lubrication of Ball Bearings

"Should the grease in ball bearings be changed with the change in temperature of the weather?" was next asked. Mr. Trewin thought that there is not

At right: J. B. Battan, of Rosemary Mfg. Co., who was elected chairman of the division at Raleigh . . . .

enough variation within the textile mill to justify this change, though in certain industries such as coal mines and refrigerating plants it might be done.

On the subject of ball bearings, it was brought out that the bearings should not be packed with too much grease or harmful results will follow. It is wise to keep an eye on the bearings and give them a shot of grease when needed, but never over-pack them. If the bottom drain is opened when shots are given ball bearings the danger of over-packing is obviated. The speaker strongly advised against using regular cup grease on ball bearings as special ball bearing grease is available at only a small difference in cost, and it is thought to be false economy to endanger the life and operating ability of ball bearings by using a product not intended for them.

For cleaning ball bearings it was recommended that a light oil be used, and a brush if necessary to remove sludge. When assembling the ball bearings, place the grease in between the balls and do not force the ball bearing on the shaft as this defeats its purpose. Again he advised against using kerosene to clean bearings and especially ball bearings.

For lubricating fast-moving open gears, in answer to a question, the speaker said it is better to use an oil instead of a grease as the latter works out from between the teeth after a few revolutions. When asked if there is a product to do the job, Mr. Trewin said a product is available having an aluminum soap base that has been found satisfactory.

This closed the regular discussion and the following officers were elected: Chairman, J. B. Battan, Rosemary Mfg. Co., Roanoke Rapids; vice chairman, W. H. Miley, Jr., Erwin (N. C.) Cotton Mills Company, Plant No. 2; secretary, George Gilliam, Sterling Cotton Mills, Franklinton; executive committee for four-year term, Grady Lyon, Erwin Cotton Mills Co., Plant No. 4, Durham; and Sydney Green, Eno Cotton Mills, Hillsboro, to fill the unexpired term of Mr. Miley, elevated from executive committee to vice-chairman.

Mill Problems Covered at Spartanburg

THE SOUTH CAROLINA Carders and Spinners Division of the Southern Textile Association met at the Franklin Hotel, Spartanburg, S. C., Saturday morning, May 13, and conducted one of the fastest moving sessions ever held. Guest speakers for the day were L. Mell Glenn, secretary of the Chamber of Commerce of Greenville, S. C., who discussed industrial employment, lack of progress, and burdensome taxes in South Carolina as compared with other southern states; and Brice Waters of the commission set up to administer the state unemployment insurance act. Joe Lyons, chairman of the division and superintendent of the Orr Cotton Mills, Anderson, S. C., presided, with Robert T. Stutts, superintendent, Woodside Cotton Mills, Simpsonville, leading the carding discussion and Henry Wood, Oconee Manufacturing Company, Westminster, conducting the spinning discussions.

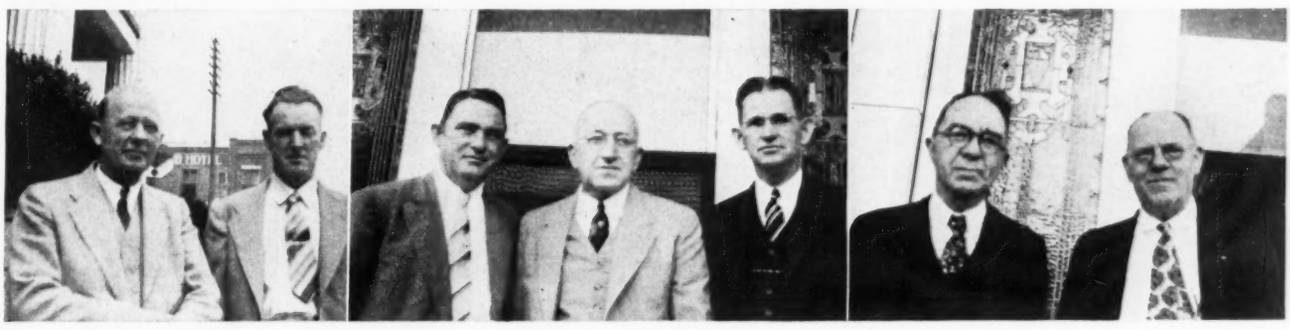
Carding

The first question asked for changes in opening equipment or methods in recent years to secure better blending of the stock. This was answered by a member who said that for a great many years he had the conventional type opener equipment, consisting of two units of No. 4 bale breakers, tandem beaters, lattice beaters, and vertical opener, but thinking that an adequate mix was not being secured, he removed the No. 4 machines and the tandem beaters and installed the old type hopper feeder and began feeding in 6 bales to the hopper, whereas formerly he had been feeding 4 bales, and now he feels that he is getting a better mix, cleaner stock, and a more even yarn. J. C. Cudd, Wallace Manufacturing Company, Jonesville, also went to the hoppers and the apron distributor carries the stock to the opener cleaner and then to the picker room. This arrangement gives evener yarn, increases the breaking strength, and gives cleaner stock. He feeds from 28 bales at the time. One hopper is also used for the waste, including waste from the drawing frames.

Another mill reporting on the question has not removed the No. 4 machines. Stock from 12 bales is fed into each hopper, the mill having three of the hoppers. The waste is run back into the main line from a waste machine, except the drawing waste, which is not run in the waste machine; upon a question this mill reported no trouble with the drawing waste running out in long pieces. Another mill has no trouble with drawing waste either.

A question was injected as to what percentage increase in waste could be expected if a plant changes from Middling to Strict Low Middling cotton. Gaston Gage of Clemson College remembered that the waste

Report and Photographs by John C. Fonville



At Spartanburg—From left to right: Frank Lockman and Oscar Nichols of the Monarch Mills, Lockhart, S. C.; H. E. Baker and W. E. Hammond, of Balfour (N. C.) Cotton Mills; W. K. Waits, Joanna Cotton Mills, Goldville, S. C.; C. H. Lockman; and D. E. MeHaffey, Industrial Cotton Mills Co., Rock Hill, S. C.

From left to right as seen in the picture: A. E. Thompson, S. W. McMahan, J. H. Ellis, E. C. Burdette, and A. B. Davis, all of the Jackson Mill No. 1, Iva, S. C.; W. T. Morton, Borden Mills, Kingsport, Tenn.; S. C. Stimson, The Bahnson Company; George D. Simpkins, Mills Mill No. 2, Woodruff, S. C.; and Guy Morrison, Penick & Ford, Ltd. (Photos made at Spartanburg meeting.)

curve is an even graph, the waste increasing proportionately as the grades of cotton become lower; he was not certain as to the exact percentage for the grades mentioned but thought it would be about 1½ per cent more.

Long Draft Roving

The next question asked for experience with long draft roving frames with reference to breaking strength of yarn and ends-down in spinning. One mill having made this test said that only a difference of .555 per cent was noticed, the percentage being in favor of the regular intermediate frame. However, on the conventional intermediate roving frame, with one process of drawing, the yarn from the intermediate breaks about 7 pounds stronger than the long draft roving yarn. With two processes of drawing this margin of break is reduced to only one pound in favor of the intermediate.

A gentleman reporting for Ware Shoals (S. C.) Mfg. Co., said that the breaking strength of the yarn from the long draft roving frames is as good or even a little better than that made from roving from the conventional 3-process system, but that there is an increase in fly in the spinning room when using only one process of roving. This plant runs a 50-grain drawing sliver, making 32s warp yarn, and having a breaking strength of 60 pounds.

Tinting Rayon to Identify

Henry Woods, who is using the 8x4 long draft slubber, finds the breaking strength about the same, but more fly in the spinning room. R. T. Stutts has the same experience. The question of running a different relative humidity on long draft roving came up, but only one plant volunteered information, saying that it is using more now but has not had time to determine whether it is helpful or not. In a discussion of the type roll covering to use on long draft roving, all men reporting were in favor of cork.

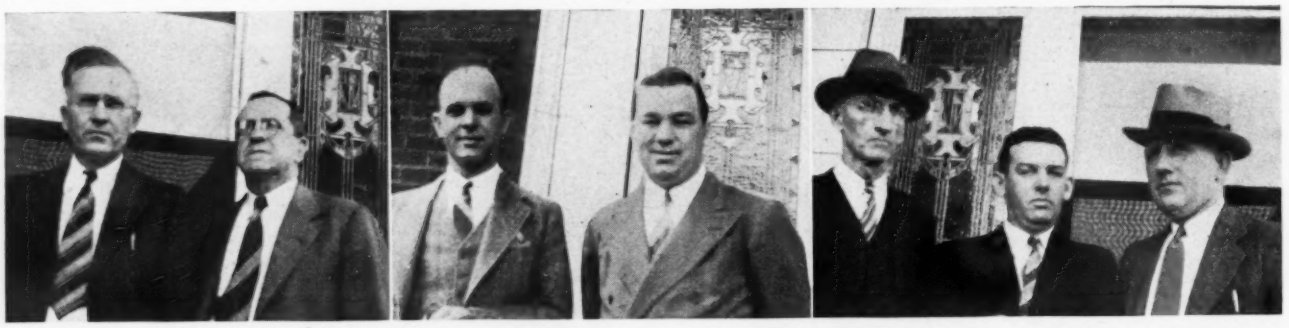
For identification purposes, Mr. Lyons has found the best way to tint cut staple rayon is to secure a soluble oil, mix with this a fugitive color, and spray it on the stock with an atomizer. In this way the stock can be tinted any desired color. Others present buy their rayon already tinted.

Next discussed were the processes used for running spun rayon. Smith Crow, Drayton Mills, Spartanburg, said that he would carry it through the picker, card, two processes of drawing, and depending on yarn count, run one process of long draft roving. For the warp he would run it single roving in the spinning creel, but if finer than 30s he would use double roving. It was said that on 1 7/16-inch staple, running 30s yarn, one can expect a breaking strength of from 60-65 pounds.

C. C. Roberts, Kendall Mills, Pelzer, runs the cut staple through the picker, card, one process of drawing, makes a .70 hank slubber roving into 4.50 hank roving and runs it double in the spinning creel, getting a break of 60-62 pounds. A representative of Whitney (S. C.) Manufacturing Company admitted that acetate staple could be run; he uses it single creel for spinning and on 30s yarn gets a break of 55 pounds.

Spinning

Henry Wood led the discussion on spinning. The first question asked if it is necessary to make lighter filling numbers in recent years, also requesting information on change of cotton or twist multiple. W. W. Splawn, Kendall Mills, Pelzer, makes 41s filling with a twist multiple of 3.63. John S. Lockman, Monarch Mills, Lockhart, contended that he has been making the same numbers for several years, but that his plant has always made the numbers somewhat lighter than most mills. He brought out that a better understanding could be had if the mills would stop talking in terms of twist multiple and tell for a change what draft and hank roving were being run.



From left to right: T. W. West, Industrial Cotton Mills Co., Rock Hill; J. E. Field, Gaffney (S. C.) Manufacturing Company; Bob Stutts, Woodside Cotton Mills Co., Simpsonville, S. C., who led the discussion on carding; H. Reid Lockman, Dary Ring Traveler Co.; and Robert Wilburn, Clyde L. Jackson, and O. E. Bishop, all of the Inman (S. C.) Mills. (Photos made at Spartanburg meeting.)

W. E. Hammond, Balfour (N. C.) Mills, thought that any possible change in numbers on the same fabrics might have developed by the mill changing the percentage of size on the yarn. His plant makes 40½s warp yarn with 26 turns per inch, using a twist multiple of 4.12. One other mill reporting uses a twist multiple of 4.10 to 4.20 on filling 40s yarn, while a mill making 30s warp yarn from cut staple uses 3.25.

Next on the prepared questionnaire was a question on lapping up on the middle roll with long draft roving. J. M. Bolt, Calhoun Mills, Calhoun Falls, has trouble with lapping up in spinning if the cotton staple is not kept even. He uses from 1 1/32-inch to 1 1/16-inch staple on warp, making 30s from 3.25 hank roving and 40s from 4.50 hank roving, the plant being equipped with long draft in both carding and spinning.

In a further discussion of lapping up on top apron a representative of Ware Shoals Manufacturing Company advised that the overseer of spinning at this plant has perfected and patented a different type of clearer board that prevents lapping up and is giving excellent service by also preventing end breakage.

When asked the percentage of loom stops caused from gouts, F. D. Lockman, Monarch Mills, Lockhart, reported that 25 per cent of the loom stops may be traced to this cause. He said that the percentage of stops could hardly be compared in the different mills as a gout in the yarn at one plant would cause trouble whereas at another mill on some other type of fabric the gout would not break the yarn when woven. The sizing method, also, he said, might cause a difference in the number of breaks from gouts. Mr. Bolt also considers about 25 per cent of the loom stops due to gouts. In answer to a question, Mr. Lockman said that many gouts could be prevented by the use of overhead cleaners at the spoolers.

No one present could report experience with the new breaker type of snick plate for Barber-Colman spoolers, but for 30s yarn, using regular snick plates, three men reporting use the following settings respectively, .030; .032; and .028.

"How many yards of 41s filling should be put on an 8-inch bobbin?" was the last prepared question. A. H. Cottingham, Victor-Monaghan Company, Greenville, gets from 1,985 to 2,100 yards, using a 1⅜-inch ring. Another man gets a little over 2,000 yards with the same size ring, while still another gets 2,800 yards, with 42½s filling. In a discussion of the size of the shuttle, Mr. Crow said that he tries to have one inch clearance between the end of the quill and the throat of the shuttle eye, using the 8-inch quill. The ballooning is too great if this distance is more. His shuttles are built with one side higher than the other, one side being 1 5/16-inch and the other side 1⅜-inch.

In further discussion it was decided that wear of the spindle at the top where the bobbin fits may be caused by the bobbin vibrating or slipping. This could be remedied by making the bobbin fit snug at this point. Trouble was also encountered when going to the large package, and one man said that the only way to remedy this is to use a larger spindle and bolster when going to the larger package.

For remedying worn out bolsters, it was suggested that the pin in the bolster be tightened.

Weaving Division Meets at Greenville

THE WEAVER'S SECTION of the South Carolina division of the Southern Textile Association held its regular meeting Saturday morning, May 27, at the Poinsett Hotel, Greenville, S. C., with Joe Lyons, Orr Cotton Mills, Anderson, S. C., chairman of the division, presiding. The attendance was good.

Wage and Hour Men Speak

James F. King, assistant wage and hour administrator, who is a native of South Carolina, spoke briefly, reviewing the provisions of the act. The question in the minds of most of the mill men present was what action Administrator Elmer F. Andrews will take on the recommendation recently submitted by a majority of the members of Industry Committee No. 1, the textile committee; and whether or not he will accept or reject the majority recommendation. It will be remembered that a dissenting report was filed at the same time by six members of the Committee, requesting that the recommendation not be accepted for several reasons, one of which is that no regional differential has been allowed between northern and southern mills.

Mr. King advised that Mr. Andrews under the law could not write a wage differential into the committee recommendation or set a minimum wage, but could either accept or reject the committee's report and recommendation in its entirety. Public hearings will be held by Mr. Andrews so that any and all objections may be placed before him before he makes a final decision on the committee report. One of these hearings will be held in Atlanta, Ga., June 26.

He also pointed out that criticism has been made of the committee on grounds that the South is not fairly represented in number, but quoted that 43 per cent of the committee are southerners. He said that this committee not only represents cotton textiles, but the rayon and silk industries as well.

According to Mr. King, pressure has been put on Administrator Andrews to reject the committee report, but he contended that this is the wrong time for any such procedure as the public hearings have not been held, and nothing will be done by the Administrator until he has gone into the committee report thoroughly and has had time for the mill men and public to air their opinions at the hearings.

If the Administrator accepts Committee No. 1's recommendation for a blanket 32½-cent per hour minimum wage, it will go into effect when the Administrator stipulates, which will certainly not be by July 1, as requested by a majority of the committee, because of the physical impossibility of so doing. If and when the wage recommendation is put into effect, under the judicial set-up of this country, it can be stopped by court injunction until a ruling has been given by the courts.

Rulings on Learners

William F. Gaffney, Charlotte, N. C., field representative for the Wage and Hour division opened himself to questions, and the first put, which is of great importance to textile executives, was what provision will be made to pay learners less than the minimum wage. Mr. Gaffney advised that this had been brought up by the shirt manufacturers, who requested that that industry be permitted to pay learners a lower-than-minimum wag, but a blanket permission to do so was not granted. It is understood that no blanket treatment of learners' pay will be given to any industry, but it is said that in certain instances organizations within the industry may be given "learner certificates" for short periods of about two months, wherein the employer may pay learners less than the minimum where there is a shortage of trained labor in the locality.

Reported by John C. Fonville

In the textile industry, it was brought out by the mill men present, it has been the custom for ambitious operatives to spend time (of their own) in the plant after working hours in order to learn a better job and gain promotion. Under the law these men would have to be paid, which the mill is unable to do.

Mr. Gaffney said that if these men were working on goods going into interstate trade they would have to be paid. Mr. King brought out that if the goods were not being placed in interstate trade, the ambitious operative might be classed as a vocational student.

This is an acute problem with the textile mills, which are rapidly using up available skilled help, and with no provision for replacing it. There seems to be a complete lack of understanding on the part of those making the law, though the administrators realize that this is quite a problem to the mill men. At present, would-be operatives of the age 16 and over, such as high school students, have no way to get mill training, and as a result are unable to find employment; consequently they are walking the streets and often getting into trouble, which would not happen should they be employed.

The vocational idea seems to be one solution to the problem but it was brought out by Mr. Gaffney that this privilege has been abused, and in one instance a plant set up a vocational school to train operatives, which finally developed into a vocational-secondshift of operatives, who were producing goods on this shift at a lower price than the first shift in this and other mills, such goods competing with higher wage goods.

Even vocational classes have to be paid if the products of the classes are sold in interstate trade. While this does not compose a minute part of the total production, mills find no reason to discard the few yards of goods woven on a vocational class loom.

Government Cannot Run Business

T. M. Marchant, president, Victor-Monaghan Company, Greenville, S. C., spoke for a few minutes, strongly attacking the present attitude of politicians and government attempting to run private business. He went on to show the wasteful policy of the government, and in actual instances the failure of local government to collect taxes from politically important taxable persons.

Brief Technical Discussion

Most of the meeting was taken up with the discussion pertaining to the wage and hour law, but C. H. Strickland, Appleton Mills, Anderson, S. C., led brief technical session.

It was brought out that in changing from the short shuttle to the longer shuttle it can be done in some instances, according to the type loom, by merely slipping the swords on the rocker shaft; whereas, in other instances it is necessary to change the parallel foot, end lay plates, rocker collars, and box backs.

Left to right: G. G. Simmons, the new chairman; C. H. Strickland, who led the discussion, and Joe Lyons, retiring chairman . . . . . .

It was thought not practical to run a quill in the shuttle longer than 8-inches on print cloth numbers, though it could be done with filling breakage. One mill has run the 8¾-inch quill on very soft twisted filling. Filling breakage on the regular bobbin was attributed to the loom becoming out of adjustment, such as the shuttle not being boxed, to soft nose bobbins, transfer set too deep, and to improperly placed bristles. This one question could have been discussed all morning, but the members were in no state of mind to do so after discussing the wage and hour law.

For getting a prominent twill line on a 2-2 twill, a member suggested trying different positions of the whip roll, similar to methods employed in getting face on broadcloth.

Tight selvages may be caused by having the selvage too heavy as compared to the body of the cloth, while "rowey" cloth on filament rayon may be remedied by having the take-up and let-off function properly. The picks on filament rayon do not stay in place as well as on cotton, which makes this condition more noticeable in filament rayon goods.

For lessening the strain when slashing rayon without positively driven cylinders, it was suggested that part of the cloth on the slasher drag roll be removed. According to discussion, 4½ per cent is too much stretch for rayon slashing. It was also brought out that grading is much more strict on rayon goods than on cotton goods.

In a short business session, G. G. Simmons of Drayton Mills, Spartanburg, S. C., was elected general chairman of the division for the ensuing year, succeeding Joe Lyons of Orr Cotton Mills, Anderson, S. C.

Another Group of Mill Men Photographed at the Spartanburg Meeting

From left to right: J. A. Lyons, Orr Cotton Mills, Anderson; Henry Woods, Oconee Mills, Inc., Westminster, who led the discussion on spinning; A. B. Moss, Whitney (S. C.) Manufacturing Company; Walt Danhoff, Chiquola Manufacturing Company, Honea Path; Bill Spencer, Whitney Manufacturing Co.; and J. B. Reeves, Jackson Mills, Wellford, S. C.

Finishing Spun Rayon Fabrics

(Continued from page 60)

be carefully chosen to avoid staining. The wool is less likely to be stained at a lower dyeing temperature if a little ammonia is put in the dyebath and when Katanol or a similar product is used. If the fabric is to be dyed in contrasting shades, it is best to dye the wool first with selected fast colors of the acid class which have been found to stain rayon but little.

For darker shades as black or navies, the wool is dyed much faster with meta-chrome colors and then the rayon tinted in a new bath where a little ammonia is used to neutralize any acid carried over. The effects and methods are many, testing the skill of the dyer. Dyestuff manufacturers have much information of their products and such problems.

Mixtures containing silk are dyed by methods and colors similar to those used for wool and good work again depends on selecting the proper dyes. Silk is more easily stained at lower temperatures than is wool.

Solid and contrasting colors are also produced on spun rayon-acetate mixtures along lines similar to those used for filament taffetas and crepes. The colors should be chosen which do not stain the other fiber too much; for such stains besides confusing matching may cause poor fastness on the rayon or the acetate. If the shades are not too dark the two kinds of colors may be dyed simultaneously starting warm and gradually raising the temperature to a maximum of 180 degrees F. If one of the shades is dark it may be best to dye it first though no universal rules can be laid down for all cases as each case may have a little variation conducive to better working.

In all cases the dyed fabrics must be thoroughly rinsed. The goods are then extracted: those in rope form with the rotary extractor after which they are hand-opened over a reel or sometimes by using a light scutcher; those which come directly from the jigs open width, can be vacuum extracted before drying. The drying is done on a loop or net dyer, the long enclosed tenter frames, and sometimes the cans, though can-drying may give a harsher feel or stretch the goods giving a sheen that is not desirable.

White or dyed cloths that are to be printed are best dried on the long frame where the wrinkles are removed, the width obtained for the pattern and the rolls wound. Printing spun rayon fabrics presents no special difficulties except where mixed fibers occur.

Can drying after leaving the print machine should not be too hot and the tension everywhere, as on the agers, must be watched. Washing such fabrics is usually done in the rope state the goods are then extracted, loop dried, and quetched with a finishing solution of oils and gums, and finally Palmered. A much cheaper method often giving excellent results is to quetch the washed and extracted cloth which is still damp with a stronger finishing mixture and dry directly on the long frame at the desired width. Subsequent silk calendering or a run through the button breaker is given when desired.

The finishing of whites and plain shades is done in a similar way. Small amounts of sulphonated oils, sulphonated tallows and gums are used to get the degree of softness, fullness, or firmness desired. Sulphonated alcohols can be used in place of these and then all danger of rancidity and subsequent evil odor is avoided. Such finishing solutions are usually applied on the quetch (in some cases on the padder and batched) and the material dried on the net or loop dryer followed by a short framing to remove the wrinkles and bring it to the proper width. Drying on the Palmer gives excellent results but is a little more expensive. For smoother or softer finish, the goods may be run over the top roller of a silk calender or even a run through the button breaker. Spun rayons may also be decatized.

Spun rayon fabrics have one great disadvantage in that they crease, wrinkle, and lose shape easily because the resiliency of the fibers is small compared with wool. Ordinary finishing agents do not help this drawback and after long research the "anti-crease" finish process was developed. It consists of treating the fabrics with a resin of the urea-formaldehyde type and "setting" the fibers by a subsequent curing at high temperatures. If properly carried out, it does not distract from the softness of the fabric but greatly enhances its feel. Water solutions are employed, can be padded on at the quetsch, followed by the curing on a loop dryer or long tenter frame for the number of minutes necessary to render the resin insoluble. The time and temperature vary with the type of resin, the kind of catalyst and amount of plasticizer employed; usually 2-5 minutes are sufficient at 240-280 degrees F. The curing should not be a baking and if not enough moisture is present, the fabric may become quite harsh. If the goods are not washed, a slight amount of acid might be left in the goods which would be objectionable. The finish is not injured by washing as it is relatively permanent.

Such "permanent" finishes are also useful in connection with the Sanforized finish often used on heavier goods like suitings. The goods are resin-treated as previously described when they are fully or partially shrunk, the resin sets the fibers at this point so much less work has to be done by the Sanforizing process and the effect is much more lasting. The occasional harshness of resin finishes may be lessened by giving another padding with a small amount of oil and loop drying again before the final finishing operations.

Besides the urea-formaldehyde resin already extensively employed, other types using poly vinyl alcohols, acrylic acid condensates, and many more being investigated, are being introduced from time to time adding finishes and possibilities to spun rayon fabrics. One of these types may develop a resin finish that does not have to be cured much above the boiling point of water and leave the rayon in better condition.

Resin finishes usually increase the strength (particularly the wet strength) of spun rayon fabrics but must not be applied at the beginning of finishing operations as the cloths would then be hard to dye evenly. They enhance the wash fastness of colors but occasionally change the shade and dyeings must be tested to discover the amounts. They also adversely affect the light fastness of some direct colors and as no data has been published concerning this defect, individual dyes and combinations must be tested by those using them.

CURRENT TEXTILE TOPICS ....

Talk of the Month

MAY BROUGHT AN INTENSIFYING of the complicated situation for cotton mills obtaining in April. The one favorable factor was an enthusiastic response of the country to National Cotton Week, in which governors everywhere recognized cotton as the No. 1 problem of the country. One other potential factor of favorable aspect was a generally promising fall outlook in business. The past month otherwise was a time of perplexity.

Artificial conditions obstruct fundamentals

Years ago we said in this column that industry was faced with a new condition—a social-economic era. What was believed in process was a transition in which private business would work under government regulation. A judicial measure of regulation would have been nothing alarming, but the government participation in business has gone to disrupting extremes. The swing of the pendulum has perhaps gone as far in that direction as rugged individualism proved demoralizing at times.

Government control of raw cotton, for example, has produced an unprecedented and demoralizing situation. Here we have had in the recent period a new case of "poverty in the midst of plenty"—that bogey which affected the whole nation after the break in 1929. Practically a full crop held off the market and yet both domestic and foreign mills were threatened with involuntary closing because they could not get staple needed!

May was a time of paradoxes. Good demand for finished goods contrasted with slow buying of gray cloths. An artificial shortage of cotton was pushing spot prices upward, while poor demand for gray goods was forcing concessions by mills wishing to accept orders at a time when the market was already near depression levels and well below costs of production. Mills taking low-priced orders faced a period of production at high levels of wages and hours under government regulation.

Control by government, as experience shows, means experiment upon experiment. In the very nature of things, political activity in business is a disadvantage. Politicians are not elected on their economic ability. That is only too obvious. There is no continuity of office, making for long consistency of policy, if sound. Government obviously has a function in economics, but it is regulatory. Society must be protected from abuses of private individuals, or groups, in economics or the underworld.

Society suffers as much from excesses of experiment in control, however well meant, by its government representatives as from abuses by private business interests. The cotton industry has been facing lately a proposal of export subsidy, whereby raw material would be sold to foreign mills at prices well below the basis which domestic producers would pay. Under that arrangement, this country would subject home mills to competition from goods at lower cost of raw material at the same time that—under the Wage and Hour law—the margin of worker costs will be increased.

This would be an expedient of desperation, following a program of control which produced chaos in the cotton world. As the New York Journal of Commerce stated around mid-May, "the new cotton control program that is being evolved in Washington now would extend government control over the production, marketing and pricing of this commodity to an extent never seriously proposed before." And it adds that "as the various efforts to stabilize have failed of their purpose over the past six years, government control has been extended."

Plenty of Cotton—Try and Get It!

Artificial tightness of supply—with 11,000,000 bales out of the market—put the mills in a plight from which during the past month they did not see the way to extricate themselves. Demands for release of loan cotton at the time of writing were falling upon deaf ears. At the same time the buyers of cotton goods were pressing for further concessions in a market ridiculously low and mills were considering drastic curtailment (actual shutdowns) through the summer as imperative.

The cotton problem, a national affair like that of taxes or tariffs, was similarly a factor obstructive to recovery which this spring was due under the natural laws of economics. A favorable technical position was reached, after the 1937-1938 recession. International political affairs and a refusal of the Administration to heed pleas for adjustment of control and taxes that would allow business to go ahead postponed recovery.

Business Scores Once In Spite of Government

Nevertheless, business has managed to have at least one good recovery under an Administration constantly committed to reform and sentiment during the past month was encouraging for another upturn in the fall. Hand-to-mouth buying has persisted in the cotton-goods market; also in other lines, although at times this year there have been signs of extended covering ahead, only to be blocked by fears of possible war abroad. Even in cotton goods, spurts of heavy buying have shown buyers in need.

Mills, especially those on print cloths, came into May with stocks burdensome under the conditions. Yet the outlook favored a heavy consumption of finished merchandise, notably because of attention brought on cotton goods by public officials as well as 75,000 stores in connection with National Cotton Week. With curtailment and a tendency of consumption to catch up with production, a prospect of balance and of general business recovery appeared hopeful for the industry.

COMBED GOODS MANUFACTURERS, which predominate in New England, were again concerned with adjusting production to requirements during the past month. This district was watching for signs of a general curtailment in the great printcloth division of the South while planning continuation of the sound policy adopted long ago. It was recognized that a similar policy in the southern mills, with their great proportion of the whole cotton industry, would conduce toward a better price position for all.

New England Mill Situation

Even early in May it was reported that a few fine goods plants actually had shut down for the time being. The spring uncertainties in general business, aggravated by poor weather, had brought hesitation at a time when finished goods should be moving well. This was the time of year when the movement of cottons over retail counters is a barometer of activity for mills and it was disappointing.

Failure of the spring to bring a warm spell of any duration found the mills in the middle of May talking of sharp curtailment. A relatively firmer market obtained in fine than in coarse goods, but it was not good at best. May and June are months to which manufacturers look forward as times of activity in finished goods, but not so much in gray cloths. Thus it was that mills were reported as planning reductions of 25 to 40 per cent in output as June approached.

While the mills in this division have worked for regulation of supply to demand for several years, buyers have been governed by the general situation in making bids for fine goods. The cotton industry at large has played into the hands of buyers for a period estimated at 20 years by recurrent periods of deficit operations. The smaller group in this district for several years has sought to break this unsound tradition, but it needs co-operation of the entire industry to convince consumers that they cannot buy below cost if they hold off.

While mills were looking to curtailment as a means toward stabilizing prices, pending the realization of good business in gray cloths, they counted upon National Cotton Week to help their prospects. As stated by the Pepperell Manufacturing Company, "it is very evident that the widespread interest in cottons throughout the country will carry National Cotton Week this year forward as one of the most important promotion periods for stores during the entire summer season.

"The fact that there has been so much news comment on the need to sell cotton, the fact that cotton is right in high style, that it is priced at the present time to appeal to everybody, has encouraged stores to sell cottons on a wider scale and more aggressively than ever before. Naturally Pepperell is doing everything possible to carry this interest in cotton just as far as it can be carried."

Two events of significance in the modern attitude of community responsibility toward industry in New England have developed during the past month or so in the State where the cotton industry of the country was born. One of these was passing of a law to save mills that have been idle some time. The other was killing of a bill to prohibit night work for women.

In the first instance, a measure was passed permitting the towns and cities to exempt from taxes such mills as had been shut down for a year or more. Recent years have seen the razing of many mills to save taxes. It was contended by those interested in the industrial rehabilitation of the State that the taxing of long-idle mills was unfair to the owners and that forcing them to raze their plants in poor times was poor business.

Women themselves, who feared loss of jobs, appear to have been the chief opponents of a measure in Rhode Island that would have prohibited night work for females in industrial plants. Only a small group of manufacturers, it was reported, opposed the measure. A similar bill passed the House last year, but was killed in the Senate.

"THE SITUATION"

As Seen Across an Executive's Desk

May 17, 1939

A REVIEW OF THE SITUATION this month resolves itself into a review of defeated legislation, pending legislation, and the industry's representatives fighting against one thing or another in Congress for the past 30 days.

This time last month the Smith Bill was very much alive but Senator Smith, though unpurged, is still in the dog-house and any legislation carrying his name is shelved by the Administration as a matter of principle; therefore, exit the Smith Bill.

Export Subsidy Defeated?

Senator Bankhead's export subsidy amendment was the livest rattle-snake on the scene during the past three weeks. After a very real battle The Cotton-Textile Institute finally obtained a hearing before the Senate Agricultural Committee at which Dr. Murchison presented an able argument against this plan.

Briefly, the proposed export subsidy for raw cotton was contained in an amendment which Senator Bankhead fathered and which he hoped to attach by a suspension of rules to the Senator's Appropriation Bill. The export subsidy itself would have required an annual expenditure of at least $150,000,000—an outright gift to the foreign manufacturer which would have placed him in a preferential position.

Dr. Murchison said that should the government undertake to use the tax payer's money in dumping 7½ million bales of cotton on foreign markets, such action would increase prices in this country and depress prices of cotton textiles by an untoward development of the rayon industry and a consequent displacement of hundreds of thousands of employees now working in cotton textile mills. His brief not only argued against the export subsidy but actually pointed out remedial plans for treatment of the cotton surplus problem. He said in part:

"A forced restoration of our so-called normal cotton exports can be accomplished only by depressing foreign cotton

prices to a point where purchases of American cotton would be made purely as speculative ventures. To the extent that this occurred the plan would have merely effect of transferring excessive cotton stocks from one country to another. Under such circumstances, the American subsidy to be effective would be nearer 4 cents a pound than 2 cents a pound.

"Such a plan would take for granted, would in fact require the continuance of a governmentally fixed price on domestically consumed cotton. Inasmuch as cotton exports would presumably be taken care of by the subsidy, the fixing of the home price would no longer be complicated by considerations of international trade.

"Raising the domestic price under these conditions would be equivalent to the imposition of the depressant processing taxes in an otherwise free market.

"All persons whose major interest is cotton, beginning with the farmers, are agreed upon the following constructive principles:

"1. That cotton should be permitted to find its own natural competitive price level in accord with economic law.

"2. That no further expansion of government loan cotton be permitted.

"3. That the present excessive loan stocks be reduced by gradual and orderly liquidation through the normal channels of trade and in a way which will not abruptly or unduly impair world market prices.

"By this method we would not waste our substance through a useless and gratuitous war on the foreign cotton growers or through a subsidy to foreign cotton spinners, or through a demoralization of international cotton prices. We would preserve our private international trade relations with the cotton interests of all countries. We would retain the marketing and exchange facilities of the United States. We would escape the necessity of further expanding the powers of government in price and trade control. But above all else we would maintain the competitive power of cotton."

As a result of the Institute's determined fight against this measure backed up solidly by other associations, by the cotton shippers, cotton exchanges, and cotton-seed crushers, all of whom worked day and night with their senators and representatives, the export subsidy amendment was defeated in the Senate 37 to 36 although a ⅔ majority would have been necessary to insure its passage. Many sources close to headquarters in Washington felt that the bill might pass by default, and everyone with the exception of a single Worth Street merchant who does considerable export business, agreed that the bill was poisonous to American industry and helpful to no one.

The original act provided that the money should not be used for payment of export subsidies, but last year Congress struck out that prohibition. As the situation stands today, the Secretary of Agriculture will have as much as $50,000,000 with which to defray the subsidy cost.

The only way the subsidy plan can be defeated is for Congress to prohibit export subsidy payments by amending the existing act, or making it inoperative by striking out the $113,000,000 appropriation.

Processing-Stamp Taxes

Another real danger resulting from the cotton mess is that the processing tax idea will be resurrected in one form of another. Currently, the favored plan is through certificates or stamps which would have to be purchased by all domestic processors with the proceeds going to the farmers who co-operate in the government program. Reliable sources state that dry goods and clothing trades can be confident that the stamp plan for disposing of food surpluses will be extended to cotton. The stamp plan does not have as much to commend it in moving cotton as it did have in moving food crops because the processing costs are so much greater and the grower does not get nearly as large a proportion for the benefit. However, pressure for the adoption of the plan to cotton is very strong. The object of the game is that relief workers would buy stamps which were going for the purchase of clothing made of wool, silk, or any other material and that they would get free stamps which would redeem cotton goods and garments.

Although the stamp plan is in operation on some food commodities, it is understood it has not been too successful and this urges us to point out that the last time the American people had a *stamp act* placed over them trouble was had which resulted in the Revolutionary War.

Bilbo Wants Net Weight

And, with all this damnfool legislation, occasionally some piece comes to light which seems to be good. In this regard we have Senator Bilbo's bill providing for buying and selling transactions of cotton on a net weight basis. The bill actually embodies one of the chief planks of the American Cotton Manufacturers Association's platform. At the Senate sub-committee hearing, May 9, no objection to the bill was heard though representatives from jute and paper interests were present, as were those representing manufacturers, cotton shippers, and the Department of Agriculture.

One more bill winds up the legislative review and that is Congressman Fulmer's plan which contemplates the use annually of six million bales of cotton in the manufacture of paper pulp. He says that the colossal quantities of wood pulp consumed in this country of which we have only a limited supply, could find a substitute in the use of cotton for their purpose since both cotton and wood pulp are basically cellulose.

Wage-Hour Hearings in Atlanta and Washington

As to wage-hour business, the administrator will conduct public hearings on the report of his committee, in Washington on June 19, and in Atlanta, Ga., on Monday, June 26. The Atlanta hearing will be held in the roof garden of the Ansley Hotel.

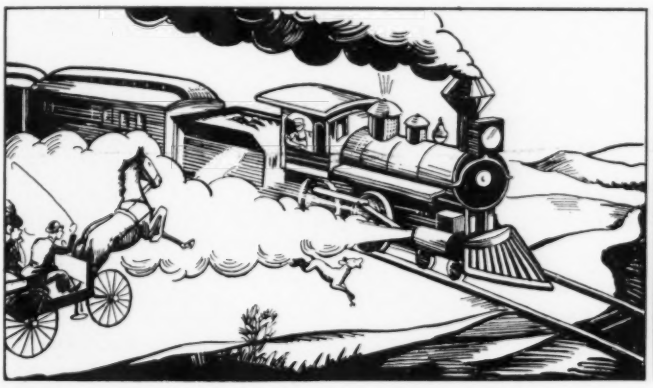
These hearings, required by the law, will be to receive testimony for and against the majority recommendation of the committee that a 32½ cent minimum wage replace the present 25-cent minimum as soon as possible. The minority group on the committee, consisting of the southern mill members and one public member, resisted the proposed increase, and it is expected that strong efforts will be made to prevent it.

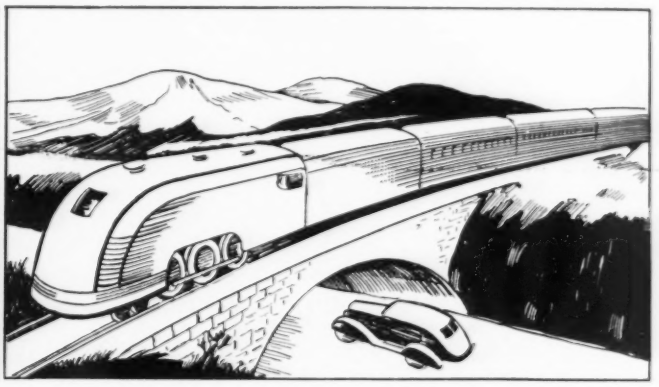
Senator Walter F. George and others in Congress have announced steps to attempt to alter the situation by excepting southern mills from the increase at this time if the majority recommendation itself cannot be prevented. Under the law, the Administrator cannot alter the recommendation; he can discharge the present committee and appoint another.

In any event, a definite wage order for the industry by July 1 does not at the present seem to be feasible.

See you in Washington on the 19th and/or Atlanta on the 26th!

Streamlining SOUTHERN BUSINESS





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Although the stamp plan is in operation on some food commodities, it is understood it has not been too successful and this urges us to point out that the last time the American people had a *stamp act* placed over them trouble was had which resulted in the Revolutionary War.

Bilbo Wants Net Weight

And, with all this damnfool legislation, occasionally some piece comes to light which seems to be good. In this regard we have Senator Bilbo's bill providing for buying and selling transactions of cotton on a net weight basis. The bill actually embodies one of the chief planks of the American Cotton Manufacturers Association's platform. At the Senate sub-committee hearing, May 9, no objection to the bill was heard though representatives from jute and paper interests were present, as were those representing manufacturers, cotton shippers, and the Department of Agriculture.

One more bill winds up the legislative review and that is Congressman Fulmer's plan which contemplates the use annually of six million bales of cotton in the manufacture of paper pulp. He says that the colossal quantities of wood pulp consumed in this country of which we have only a limited supply, could find a substitute in the use of cotton for their purpose since both cotton and wood pulp are basically cellulose.

Wage-Hour Hearings in Atlanta and Washington

As to wage-hour business, the administrator will conduct public hearings on the report of his committee, in Washington on June 19, and in Atlanta, Ga., on Monday, June 26. The Atlanta hearing will be held in the roof garden of the Ansley Hotel.

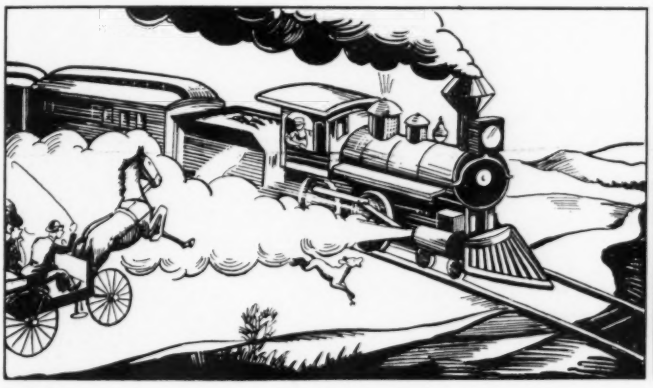
These hearings, required by the law, will be to receive testimony for and against the majority recommendation of the committee that a 32½ cent minimum wage replace the present 25-cent minimum as soon as possible. The minority group on the committee, consisting of the southern mill members and one public member, resisted the proposed increase, and it is expected that strong efforts will be made to prevent it.

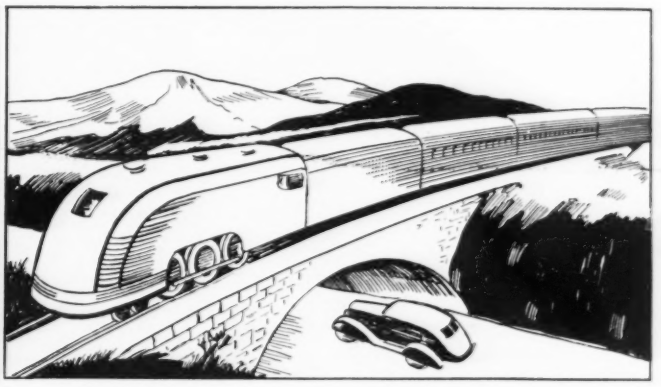
Senator Walter F. George and others in Congress have announced steps to attempt to alter the situation by excepting southern mills from the increase at this time if the majority recommendation itself cannot be prevented. Under the law, the Administrator cannot alter the recommendation; he can discharge the present committee and appoint another.

In any event, a definite wage order for the industry by July 1 does not at the present seem to be feasible.

See you in Washington on the 19th and/or Atlanta on the 26th!

Streamlining SOUTHERN BUSINESS





with Our Dollars

The transition in railway transportation is but one example of how the streamlining motif has quickened the pace and enriched the enjoyment of modern living through inventive mechanical genius.

It's just as possible to streamline your company's financial arrangements to make for faster and more efficient operation. Our factoring service offers you cash for your sales, saves collection expenses and credit losses, and reduces your accounting costs.

And because this service is **Southern** in scope, you receive personal, understanding attention, at a speed that materially lessens interest charges.

Write to

Factoring Division

of

THE TRUST COMPANY

OF GEORGIA

ATLANTA

What the Southern Mills are Doing

M. W. Cannon & Company, manufacturers of chenille bedspreads, has begun operations in Chattanooga, Tenn., taking over the building formerly occupied by the Champion Hosiery Mill. 150 machines have been installed, along with a dye plant and laundry. Offices are also located in the building and an attractive showroom has been fitted out.

Ballinger Company, Philadelphia, has been selected to design the proposed filter plant to be erected at the American Viscose Plant, Roanoke, Va. Plans call for the enlargement of the filtering capacity by the installation of four of the latest type concrete filters with a capacity of 2800 gallons a minute. A new sedimentation basin will be housed in the proposed addition.

The old McAden Mill, idle for several years, will begin operations soon under the new name of Stowe Cotton Mills, Inc., with R. L. Stowe, president and W. J. Pharr, treasurer. This mill will have about 25,000 spindles. The buildings will be renovated and machinery installed.

Plans for the erection of a one-story warehouse recently adopted by the North Georgia Processing Company, Toccoa, Ga., have been changed and a building having approximately twice the capacity will be built. Construction will be done by the A. K. Adams Company, Atlanta.

Gainesville (Ga.) Cotton Mills have begun selling the village homes to the operatives. Prices asked for the houses range from $1250 to $1500. They are sold only to the workers on a weekly rental basis, which in a 10-year period will permit the purchaser to become owner.

The offices of The American Yarn & Processing Company, Mt. Holly, N. C., are now located in the Kaplan Building. This building has been modernized to accommodate executive and clerical offices, and the cotton classing department.

Further modernization of the Avondale Mills of Alabama, Sylacauga, Ala., and the Cowikee Mills, Eufaula, Ala., is expected to cost more than half a million dollars this year. Long draft roving to take care of such needs in every plant is being installed.

It is reported that Southern Mills, Inc., Atlanta, Ga., have let contract for the construction of a 90x100 foot addition to Van Winkle & Watkins, Atlanta. The addition is to be a one-story building and will cost $30,000.

◆

Social Circle (Ga.) Cotton Mills have installed new machinery consisting of Whitin cards, Saco-Lowell drawing frames and lap winders, Woonsocket long draft roving frames, long draft spinning, and a Barber-Colman spooler and warper.

Stockholders of the Richmond Spinning Company, Chattanooga, Tenn., have voted to liquidate the business. This is one of the city's oldest textile firms, having been founded in 1890. No definite plan for liquidating has been announced.

Burlington Mills Corporation, Lexington, N. C., have let a contract to G. W. Smith for construction of an 87x125 brick and steel addition to the rayon piece goods plant of the Lexington Silk Mills.

It is reported that the machinery of the Wymojo Yarn Mill, Rock Hill, S. C., will be dismantled and shipped to Gastonia, N. C. It is understood that this equipment is to be used in the Priscilla Spinning Company.

Carter Mill No. 2, Taylorsville, N. C. has been purchased by W. Forest Kincaid, Jr., Lincolnton, N. C. This mill was built about 35 years ago, has 7,000 spindles and employs about 150 persons.

Springs Cotton Mills, Chester, S. C., are building 20 new modern residences at the Eureka plant village. Half of these will be 5-room homes and half 4-room.

Walter S. Griffin, Greenville, S. C., has purchased the Pelham Mills property for about $40,000. Negotiations are under way to lease the property to a hosiery mill.

It is being reported that Golding Brothers of New York are planning to erect a finishing plant somewhere in the Greenville-Spartanburg area.

Lockmore Cotton Mills, York, S. C., operated by Textiles, Inc., of Gastonia, N. C., are being dismantled and the machinery moved to Gastonia.

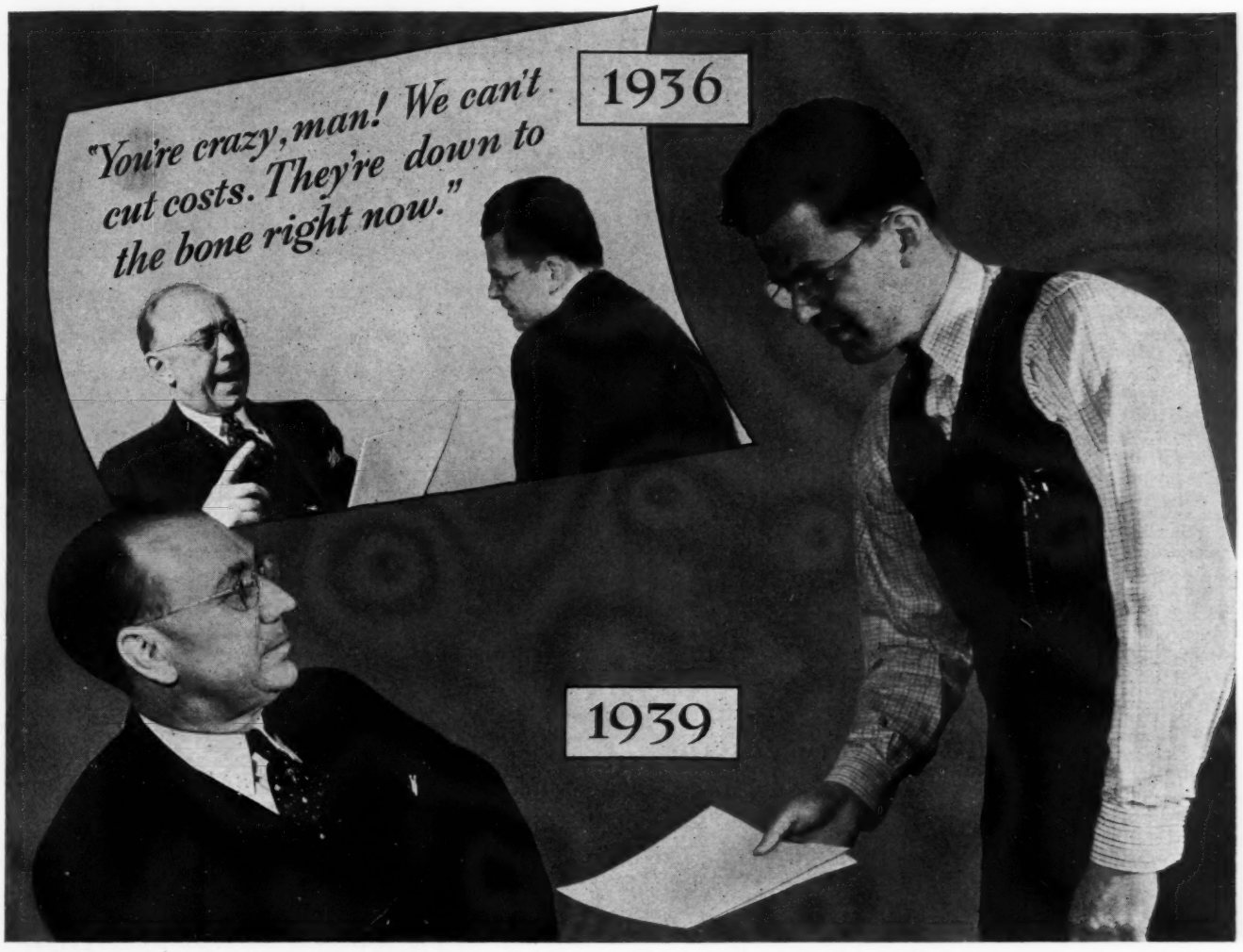
Randolph Mills, Inc., Franklinville, N. C., is constructing a 32x100 foot addition to the dyeing department of the No. 2 plant.

Celanese Corporation of America has let a contract for the construction of six buildings on the site of the company's new plant at Pearisburgh, Va.

Vocational Class at Rocky Mount

The Rocky Mount (N. C.) Mills are another of the progressive organizations that believe in training the men within the plant for higher positions. Vocational and night classes have become popular with the textile mills during the past few years, the plants discovering that technical and general education for the employees in the long run give excellent results and make better citizens. The above men are all employees of the Rocky Mount Mills and attend classes held at night twice a week. Subjects taught are cotton mill mathematics, fundamentals of arithmetic, percentage and ratio, square root, weights and measures, machine constants, etc. The students are able to figure drafts, twists, waste, speeds, etc. The social side of the organization is not forgotten as the men meet with the overseers and superintendent at barbecues and other gatherings of the technical operating men.

Those shown in the picture, reading from left to right, are: First Row: Graham Percy, Greely Davis, H. A. Parris, James Coley, Coy Frye, and Louis Ellis; Second Row: Charles Rose, George Williams, Clarence English, Sam Powell, Mercer Avent, Atwood Price, and Sam Crusenbury; Back Row: M. G. Frye, superintendent; W. L. Jones, instructor; Allen J. Casey, James Cuddington, George P. Gatlin, James Rose, Oliver Mathis, Charlton Hay, Clarence Strickland, Frank Hay, and R. W. Dunn, instructor; J. M. Mathews was absent when the picture was made.



"But the boss ate his words

WHEN WE DID CUT ROLL COVERING COSTS IN HALF"

"THE boss called me crazy back in '36. But I don't hold it against him. I'd have said the same thing if I'd been in his shoes then and some one came talking to me about cutting costs. What he forgot was that even in a big mill, it's the little things that count. Things like roll coverings.

"Anyway, he let me change the mill over to Armstrong's Cork Cots, and we began saving money right off the bat. First of all we began to turn out a more uniform product. Better running work, too, with fewer top roll laps, less end breakage. And, do you know, these new cots practically did away with eyebrows altogether. And we got much less clearer waste, too.

"But that wasn't all. Getting down to the cots themselves—their first cost wasn't any greater than the coverings we'd been using. The saving began with their quicker, cheaper assembly. We found that cork not only lasts longer, but we've been able to renew each roll three or four times by rebuffing. And the cost of that is only about half a cent a roll. All told, we've cut roll covering costs by more than 50%—and when the boss saw that figure, he said he didn't mind eating his words."

Find out how *your* mill can improve yarn quality and cut production costs by a change-over to Armstrong's Seamless Cork Cots, the modern roll covering. Let an Armstrong representative show you actual production figures of mills spinning your range of numbers on cork. Or write to Armstrong Cork Co., Industrial Div., Textile Products Section, 923 Arch St., Lancaster, Pa.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

COMMENT on the Cotton Market

New Orleans, May 15, 1939

PENDING SOMETHING DEFINITE in the way of legislation to govern the marketing of cotton favorable to the grower and the trade in general, the cotton market has done more than hold its own, mainly because of large domestic consumption and the scarcity of "free" cotton, especially of desirable grades.

The European political situation remains a disturbing factor, spinners' takings continue light and exports of raw cotton are of very small proportions, promising to be the lightest for many years past.

As is generally known, the supply of raw cotton in the United States is very large, being of record-breaking proportions, but is mostly tied up in government loans.

The plan for a government subsidy to increase exports of American cotton suffered a setback in the Senate recently when the Chamber refused to suspend its rules in order to attach a rider dealing with the program to the then-pending agriculture department appropriation bill.

Subsequently, the Senate voted approval of the agriculture appropriation bill carrying an additional $338,000,000 for farm parities and surplus disposal. But with the setback of the export subsidy plan, it is thought that surplus disposal projects will not include an export subsidy. However, there still seems to be some effort at Washington to revive the subsidy bill, and the urgent plea of British spinners for American cotton may meet with a favorable response at least in administration circles.

The new parity payment bill is expected to be published soon and to be a modified form of the old Smith bill. All of this legislation, it is said, must yet go before the House and if finally adopted there, probably will have to go to a joint conference before it becomes a law.

The New Orleans spot cotton Merchants' Assn. sent a protest to Secretary Hull against the institution of barter deals with European nations.

The market is largely dominated by the tightness in the old crop months due mainly to the scarcity of offerings because of light stocks of "free" cotton, in consequence of which the basis is reported to be high. Apparently new crop options feel the effect of wider parities at Liverpool, and some in the trade believe that the huge sums contemplated by Congress for cotton benefits as inducements to get American cotton out into world markets may tend to bolster the American price from the current discounts on the new crops.

Trade Advices

UNITED STATES—Following the recent expansion of business on rising cloth prices, sales of cloth by domestic mills slowed down again.

ENGLAND—The yarn and cloth business improved as cotton prices advanced on reports that no American loan cotton may be released and that the export subsidy plan may not be adopted. Home demand is well maintained as a result of general business activity due to armament work. Mill activity in Lancashire is holding at a fairly high level.

FRANCE—Mill sales of goods are balancing output with mill activity unchanged. Most mills are booked to the end of the year.

ITALY, BELGIUM, HOLLAND, SWITZERLAND AND SWEDEN—Mills are about holding their own.

Progress of the Growing Crop

Crop accounts are generally mixed with some complaints of too much rain and cool weather in the central and eastern belts, while some sections of the western belt complain of the lack of sufficient moisture. Of late, however, there have been beneficial rains over much of the southwest.

Fertilizer tag sales in nine cotton-growing states, December 1 to April 30, represent 3,483,000 tons compared with 3,319,000 in the same period last season.

The Garside Service estimates World Consumption of cotton during the first 8 months of the season to the end of March at 18 679,000 bales v. 18,695,000 in the same period last season.

CENSUS REPORT—MAY

UNITED STATES— Bales—	This season	Last season
Consumption of lint, April	547,000	413,000
Consumption of lint, 8 months	5,150,000	4,430,000
Miss stocks April 30	1,292,000	1,700,000
Stocks in public storage and warehouses April 30	12,968,000	10,487,000
Stocks in mills, public storage and warehouses April 30	14,260,000	12,187,000
Active Spindles during April	22,109,000	21,773,000
Consumption of lint in cotton growing states, April	464,000	350,000
Consumption of lint in New England States, April	68,000	50,000
Consumption of lint in all other states, April	15,000	13,000
Consumption of lint in Cotton Growing states, 9 months	4,361,000	3,767,000
Consumption of lint in New England states, 9 months	649,000	541,000
Consumption of lint in all other states, 9 months	140,000	122,000
Active spindles in cotton growing states April	16,815,000	16,415,000
Active spindles in New England states, April	4,696,000	4,758,000
Active spindles in all other states, April	598,000	600,000

AMERICAN COTTON

August 1 to May 12 Bales—	This season	Last season
Brought into sight (marketed)	10,249,000	14,687,000
Exports from the United States, inc. Canada	3.239,000	5,410,000
Spinners takings, world	9.804,000	10,314,000

WORLD'S VISIBLE SUPPLY OF COTTON

May 12— Bales—	This year	Last year
Stock at United States ports	2.068,000	2,709,000
Stock at 102 Interior towns	3.901,000	2,928.000
Afloat to and at ports of Europe	652.000	1,463,000
Afloat to and at ports of Orient	169,000	269,000
Totals of American	6,790,000	7,369.000
Total of other kinds	2,400,000	2,309,000
Total of all kinds	9,190,000	9,678,000

New Publications of Textile Interest

CONTINENTAL-DIAMOND FIBRE COMPANY, Newark, Del. Catalog illustrated in color descriptive of the company's diamond fiber hollow ware, consisting of boxes, trucks, cans, barrels, baskets, and trays, all applicable to the textile industry.

AUTOMATIC NUT COMPANY, INC., Lebanon, Pa. Leaflet descriptive of nuts that automatically lock themselves and stay locked until unlocked with an ordinary wrench. Suitable for looms and other machines of high vibration.

NATIONAL INSTRUMENT COMPANY, 44 School St., Boston, Mass. Literature descriptive of the Timeter with indicating lamp; used to keep record of actual production hours and shows operation of machine at a glance.

THE MARQUETTE METAL PRODUCTS COMPANY, 1145 Galewood Drive, Cleveland, Ohio, Literature describing the company's spinning and twisting spindles for every requirement.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, East Pittsburgh, Pa. Literature A-68452 on the air-cooled control transformers for use on loom warp stop motions; A-68536 for small plant and industrial ac switchboards with knife switches and fuses; A-68579, comprehensive information on the application and selection of steam turbines.

STEEL HEDDLE MANUFACTURING COMPANY, 2100 W. Allegheny Ave., Philadelphia, Pa. A folder, well illustrated, dealing with hard chrome as it pertains to textile harness equipment.

BURROUGHS ADDING MACHINE COMPANY, Detroit, Mich. "How to Save Time in Your Office", a 20-page brochure dealing with the elimination of needless motions; presents valuable suggestions; gives helpful short cuts.

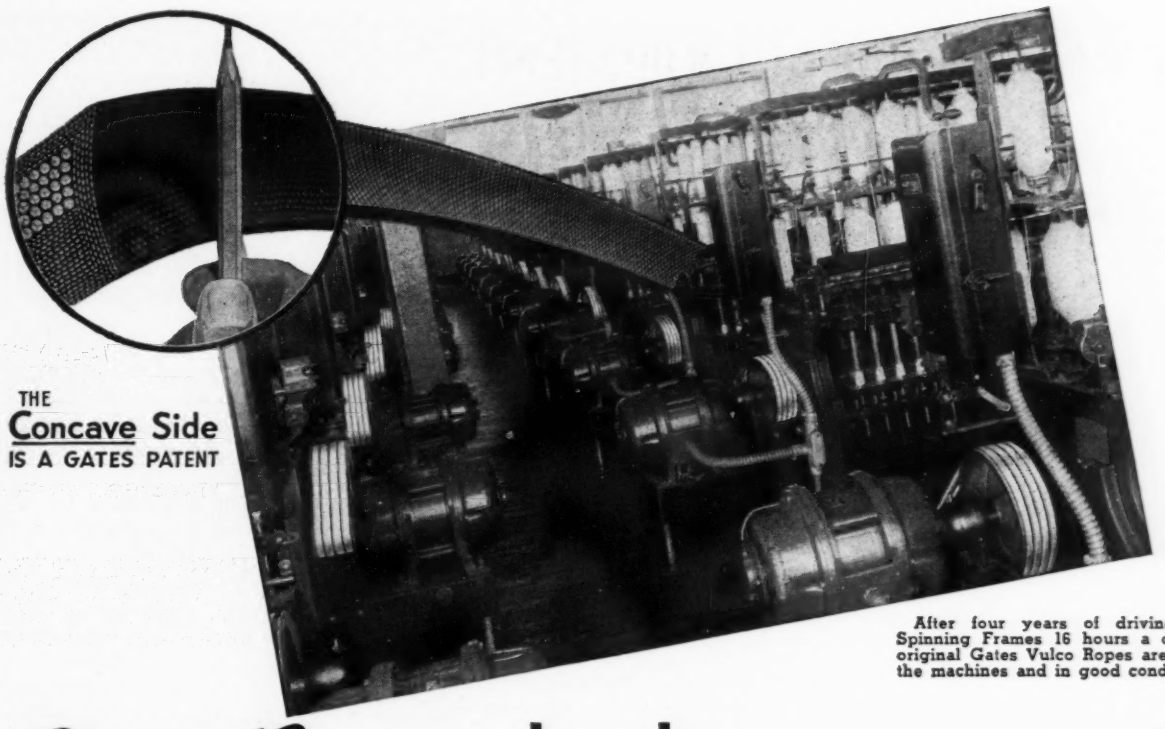
GENERAL RADIO COMPANY, Cambridge, Mass. Literature descriptive of stroboscopes for use in speed measurement, analyzing high speed operations, and photography.

INTERNATIONAL FILTER COMPANY, Chicago, Ill. Bulletin 23-800 on water treatment in the textile industry, telling what condition the water should be in and how this may be accomplished.

WHITIN MACHINE WORKS, Whitinsville, Mass. New folder descriptive of the blending feeder, which cleans and blooms the stock and gives a better mix for stronger yarns.

THE PERMUTIT COMPANY, 330 West 42nd St., New York City. Bulletin No. 2215 on the company's portable water softeners, equipped with skids for portability. Also, Bulletin No. 597 descriptive of zeolite water softening.

KIDDER PRESS COMPANY. Dover, N. H. Folder describing uses of the Chapman electric neutralizer, which removes static electricity in all material. Said to be helpful on cotton, wool, etc.



After four years of driving these Spinning Frames 16 hours a day, the original Gates Vulco Ropes are still on the machines and in good condition.

Just Feel a bending V-BELT

if you want to *Spend Less* for BELTS and POWER

AS a V-belt bends, you can actually *feel* its sides *change shape!* The top of the belt is under tension and grows narrower (see figure 1, at right). The bottom is under pressure—therefore it widens. These stresses force a straight-sided V-belt to *bulge* in the sheave groove (Fig. 1). This causes uneven wear on the belt sides—*shorter life!*

Now look at figure 2. There you see how the concave side of the Gates Vulco Rope (U. S. Patent 1,400,539) exactly corrects this bulging. It insures a perfect fit in the sheave groove with *uniform* side-wall wear and, therefore, *longer life!* It insures that the *entire* side-wall grips the pulley—heavier loads are carried without slippage—belts are *saved* and power consumption *reduced!*

The Gates Vulco Rope is the only V-belt built with the patented concave side.

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL., 1524 South Western Ave. HOBOKEN, N. J., Terminal Building BIRMINGHAM, ALA., 1631 1st Ave., S. LOS ANGELES, CAL., 741 Warehouse St.

DENVER, COLO., 999 South Broadway DALLAS, TEX., 2213 Griffin Street PORTLAND, ORE., 1231 N. W. Hoyt St. SAN FRANCISCO, CAL., 2700 16th St.

New Textile Equipment and Materials

New Roller-Bearing Spindle

The Marquette Metal Products Co., Cleveland, Ohio, have placed on the market the Marquette Novibra precision-built roller-bearing spindle for textile mills, to meet the demands of larger packages and higher speeds in spinning and twisting. The speed at which this new spindle may be run, it is pointed out, is governed entirely by the maximum speed of the spinning and twisting machinery and the speed at which the yarn may be spun or twisted; speeds of 13,000 r.p.m. and above are practical on cotton spinning, it is explained.

The idea of the Novibra roller-bearing spindle was conceived by a European inventor, and it has been successfully used abroad for 15 years. After a careful survey of the spindle situation in cotton, wool, rayon and silk mills, Marquette purchased the Novibra patents a year ago, and for 12 months the company has been manufacturing these spindles — testing them in the laboratory and under actual operating conditions in a number of mills —and now Novibra spindles are available for the first time in the United States. Every part is turned out complete in the Marquette plant, which for 20 years has been manufacturing precision machinery and parts, including parts for leading rayon producers.

The Novibra is a high-speed, roller-bearing spindle, made and balanced so that vibration is reduced to a minimum. It assists in overcoming out-of-balance bobbins by a special device for true seat location and by means of a full-floating damping footstep bearing designed to allow the loaded spindle to center itself at all times and at any speed, and to run in the center of the rotating mass.

Assembly and disassembly of parts is very simple. The roller bearings and bolster are enclosed so that no dust or dirt may interfere with the moving parts. The system of lubrication is so designed that no oil or oil vapors can come in contact with tapes, belts, bobbins or yarns. Lubrication is required only at infrequent intervals.

◆

Warp-Stop Loom Transformers

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has provided an air-cooled control transformer, designed for applications requiring circuit insulation and to provide voltage changes for the practical and economical operation of industrial apparatus. The transformers are applicable for such equipment as warp-stop loom motions.

◆

New Continuous Peroxide Bleaching Process Announced

A new continuous bleaching process for textiles, employing peroxide as the basic reagent, was announced last month by The R. & H. Chemicals Department of E. I. DU Pont DE Nemours & Company, Wilmington, Del., who explain that the process has been successfully applied to cotton piece goods lighter than sheeting, and that market whites, dye-bottoms and colored yarn materials are handled with equal versatility. On a wide range of fabrics, it is pointed out, the results are characteristic of high quality of uniform and permanent whiteness, absorbency, mote removal, cuprammonium viscosity and retention of fabric construction.

The process is very simple. The goods are first saturated in rope form with the bleaching solution, passed continuously through a specially designed heating tube into a J-box, where sufficient reaction time is allowed. From that point the material is pulled through the usual type of plant washer on the way to the white bins.

Early in their work on this new process, DU Pont chemists erected portable semi-continuous equipment in one finishing plant after another, bleaching a variety of goods. Recently a completely continuous unit of production size has been operated with successful results in a prominent New England mill.

The bleaching unit consists of an upright stainless steel chamber designed for efficient utilization of chemicals, with savings in steam, water and labor, and small floor space. The speed with which the goods can be finished ready for shipment is a notable feature. Processing time can be reduced by a day or two depending on the existing plant facilities, it is explained, because only one to five hours are required to pass the goods from desize or sour to the white bins.

Process and equipment patent coverage has been applied for. The new equipment will be constructed by manufacturers of textile finishing machinery.

◆

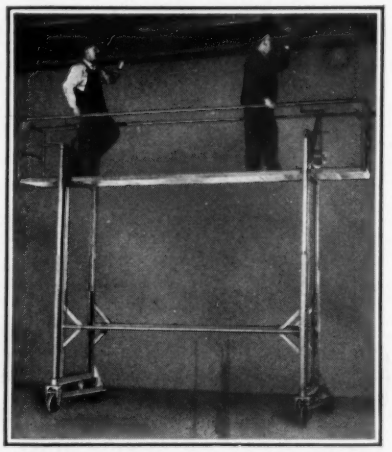
Adjustable Diameter Pulleys

The American Pulley Company has developed a simplified device for varying the speeds on industrial machinery, said to eliminate time-taking adjustments and inefficient performance. Adjustment can be made quickly by merely turning the collar of the pulley with a spanner wrench. As the adjusting collar is turned, the side walls making up each groove are regulated, increasing or decreasing the pitch diameter with corresponding speed changes. By use of the adjustable diameter pulleys on both the motor and driven shafts, greater adjustment can be secured. On these pulleys, both sidewalls making up each groove move in or out simultaneously, according to the company, and thereby produces perfect belt alignment with the grooves in the companion pulley.

◆

Portable Scaffold

Economy Baler Company, Ann Arbor, Michigan, have developed the "Scafol-Car," a traveling scaffold with a number of interesting features. The Scafol-Car eliminates the necessity of using the common step-ladder and rickety scaffold and the necessity of moving and re-setting. The equipment consists of a platform, provided with a safety guard-rail, mounted on a movable standard. The workmen roll the Scafol-Car to the job and place their tools and equipment on the working platform. They lift or lower themselves and the load to the proper height by turning a lifting crank.



New portable scaffold seen in use in a textile plant . . . .

THE NEW CATION-ACTIVE SOFTENER, GIVES AN EXTRA SOFT AND EXTRA DURABLE FINISH TO CELLULOSE FABRICS

• Lightning, the result of attraction between positive and negative electrical charges, is an **unharnessed** force of nature. In the use of Appramine-C, however, a similar principle is **controlled** to produce an EXTRA SOFT and extra durable finish on cellulose fabrics. This product, being cation-active or positively charged, has a natural affinity for cellulose fabrics, which are ordinarily negatively charged in finishing. • For this reason only relatively small quantities of Appramine-C are necessary for a given result, which means HIGH SALES APPEAL for your fabrics at LOW COST. • Let us recommend an Appramine-C formula for YOUR cellulose fabrics.

IT'S A
WARCO PRODUCT

WARWICK CHEMICAL COMPANY

WEST WARWICK, R. I.

FACTORIES IN WEST WARWICK, R. I. AND ROCK HILL, S. C.

BRANCH OFFICES at Bethlehem, Pa.; Philadelphia, Pa.; Paterson, N. J.; Burlington, N. C.; Griffin, Ga.; 580 Fifth Ave., New York, N. Y.

IMPREGNOLE CORP., Sales Agents for IMPREGNOLE, 580 FIFTH AVE., NEW YORK, N. Y.

Without getting down, the workmen may move the car with themselves and the load backward, forward, or in any direction by turning a driving crank that propels the bottom driving wheel. The equipment is quickly collapsible, requiring only 16 square feet of storage space, and is readily assembled.

◆

Reliance Introduces Small Adjustable-Speed Drive

The Reliance Electric & Engineering Company of Cleveland, Ohio, has developed an all-electric, ac, adjustable-speed drive which employs a proven principle of speed control heretofore confined to large units.

The new drive consists of a control unit and an adjustable-speed motor which is applied directly to the machine to be driven. This speed-changing combination is intended to bring to motor users having only an alternating current power supply an economical means of varying the operating speeds of their small motors (from one hp. up) over as much as a 12 to 1 range. To be produced in quantity for off-the-shelf delivery, the Reliance V*S Drive, as it will be known, is composed of

Small adjustable speed drive

elements already common to the ordinary squirrel-cage motor and dc generator. In fact, all of the new unit's electrical and mechanical parts are similar to those handled regularly in the maintenance work of any plant, however small.

The speed control unit has been designed for use on three-phase, 60-cycle, 220-, 440-, and 550-volt ac circuits. Of vertical construction, it occupies a minimum of floor space and can be mounted anywhere in the shop.

The motor can be started and stopped without interfering with the speed setting. Moreover, the speed can be changed while the motor is in operation. Quick stopping is obtained by regenerative braking. Furthermore, no clutches of any description are needed since plenty of torque has been provided for all starting conditions.

Automatic Lock Nut

Automatic Nut Company, Inc., Lebanon, Pa., has made available nuts for use on such textile machinery as looms, where the vibration is excessive, which are self locking. They may be secured in either the USS and SAE threads, either plain or cadmium plated. These nuts both lock and unlock at the will of the fixer, who uses an ordinary wrench. The lock is an integral part of the nut, and there are no washers, pins, or other separate parts to be mislaid and forgotten during installation.

◆

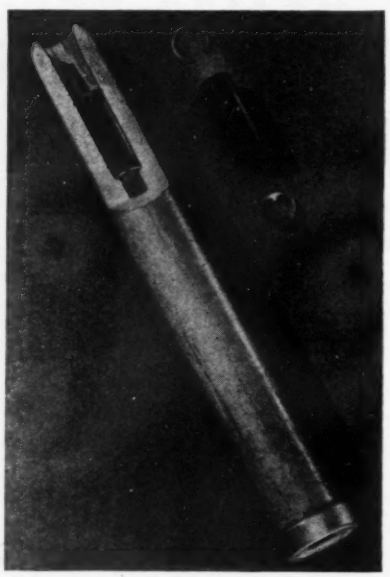
Patents Granted

According to Paul B. Eaton, patent attorney, Charlotte, N. C., several patents of interest to textile plants have been awarded.

William H. Bahan, Greenville, S. C., has been awarded patents on an eccentric connection for connecting the pitman rod and the loom sword together; a harness connector comprising a buckle member to be secured to one end of a harness strap, the other end of the buckle member having a hook thereon for engaging an eye in the harness frame; a bobbin holder for looms to prevent rotation of the bobbin in the battery prior to transfer.

Homer V. Lang, Charlotte, N. C., received a patent on apparatus for treating yarn. Boyd H. Bridgman, Whitney, S. C., received a patent on a dagger lifter for looms. E. A. Hill, Greenville, S. C., was awarded a patent on a beam lock for looms.

Cushion Bearing Bobbin



The above photograph illustrates the new cushion bearing warp bobbin of the Saco-Lowell Shops, a detailed description of which, without illustration, appeared on page 96 of the May issue of COTTON. *The parts comprising new bushing are shown disassembled . . . . . .*

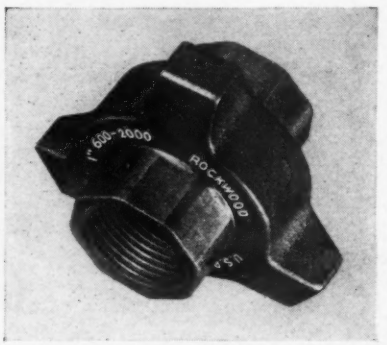
Lamp Lowering Hangers

Thompson Electric Company, Cleveland, Ohio, has greatly expanded its line of lamp lowering hangers and lamp shock absorbers. The line has been refined, but the basic design is retained. The units may now be used with floodlights as well as reflector units.

◆

Dualsteel Union with Triple Lug Nut

Rockwood Sprinkler Company, 38 Harlow St., Worcester, Mass., has designed a new solid constructed union made of a new special alloy steel, said to be stronger, tougher, and more cor-



Union with triple lug nut

rosion resistant. The triple lug nut provides greater convenience in making up and breaking unions apart. Dualsteel is a special alloy, a graphitic or temper carbon steel having the strength to withstand high pressures.

◆

Timeter with Indicating Lamp

National Instrument Company, 44 School St., Boston, Mass., is manufacturing the Timeter with indicating lamp, which serves a two-fold purpose, that of registering and keeping accurate record of production hours, and showing operation of machine at a glance. It operates by a small slow-speed self-starting synchronous motor.

◆

To Hold DC Motor Speed Constant

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has developed a new form of speed regulator, which depends for its response on a flywheel or inertia member which is sensitive to rate of change of speed and to a member responsive to change in speed, both acting on a single pair of contacts. This combination of elements is said to provide an anticipatory response which offsets the time delays experienced in speed regulating systems; the regulator is therefore anti-hunting in its action. The regulator is applicable for machines having large time delays, where accurate speed control is required for machines above the fractional horsepower class.

Even on Run-of-the-Mill jobs—

LUBRIPLATE

LUBRICANTS

CUT COSTS

YOU may already be using Lubriplate products for special applications such as Ball Bearing Lubriplate to make your ball and roller bearings run smooth and last longer—likewise you may be using No. 130-A for lubrication and protection of open gears. But how about those "run-of-the-mill" jobs? Do you still use ordinary grease or oil for the ordinary jobs? Don't let it fool you. Those are the jobs where you need Lubriplate—and need it most.

Think it over—where you now use 100 lbs. of ordinary grease—a Lubriplate product saves 50, 60, 75% in consumption alone. Where you now put up with excess wear, loss of power by wasteful friction and lost machine time, you change the picture completely by changing to Lubriplate Lubricants.

There is a Lubriplate product for your every need—and remember this: When cost of Lubrication is properly measured in terms of time, Lubriplate will always be found the most economical from every point of view. See your nearest dealer today.

QUICK FACTS

ABOUT LUBRIPLATE LUBRICANTS

1. Produces a wear-resistant film on working surfaces.
2. Resists rust, corrosion and pitting.
3. Lowers maintenance and power costs by reducing friction and wear.
4. Lubriplate is white and clean.
5. Outlasts ordinary lubricants many times.
6. Cheapest in the long run. A little goes a long way.
7. Available in fluid and grease types for your every need.

THERE IS A LUBRIPLATE DISTRIBUTOR NEAR YOU

APPLETON, WISC.
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ASHEVILLE, N. C.
Tidewater Supply Company, Inc
ATLANTA, GA.
Chears Company
BALTIMORE, MD.
L. A. Benson Co., Inc.
BANGOR, ME.
Chase, Parker & Co., Ernest Wood, Representative
BINGHAMTON, N. Y.
Ellis W. Morse Co.
BIRMINGHAM, ALA.
Jefferson Brick Supply Co.
BOSTON, MASS.
Chase, Parker & Co.
BRIDGEPORT, CONN.
Hunter & Havens, Inc.
BUFFALO, N. Y.
J. R. Sullivan (Representative) 28—15th St.
BUTTE, MONT.
Montana Hardware Co.
CHARLOTTE, N. C.
H. T. Sedgwick (Representative) 301 Poplar Apartments
CHATTANOOGA, TENN.
Noland Company
CHICAGO, ILL.
Metal Lubricants Co.
CINCINNATI, O.
Cincinnati-Vulcan Co.
CLEVELAND, O.
J. R. McKee (Representative) 11821 Princeton Ave.
COLUMBIA, S. C.
Tidewater Supply Company, Inc.
DALLAS, TEXAS
The Wink Supply Company
DENVER, COLO.
M. L. Foss, Inc.
DETROIT, MICH.
Fiske Bros. Refining Co., General Motors Building
GASTONIA, N. C.
Gastonia Mill Supply Co.
GREAT FALLS, MONT.
Montana Hardware Co.
HARTFORD, CONN.
L. L. Ensworth & Son, Inc.
HELENA, ARK.
Lewis Supply Co.
HOLYOKE, MASS.
J. Russell & Co.
HOUSTON, TEXAS
The Rex Supply Co., Inc.
HUNTINGTON, W. VA.
Banks-Miller Supply Co.
KNOXVILLE, TENN.
Knoxville Belting & Supp. Co. 408 W. Jackson Ave.
LOS ANGELES, CAL.
L. A. Rubber & Asbestos Co.
MEMPHIS, TENN.
Lewis Supply Co.
MINNEAPOLIS, MINN.
McGlynn Oil Co.
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Turner Supply Co.
NEWARK, N. J.
Seither & Ellis, Inc.
NEW HAVEN, CONN.
Page, Steele & Flagg Co.
NEW ORLEANS, LA.
C. T. Patterson Co.
NEW YORK, N. Y.
Topping Brothers, Inc.
NORFOLK, VA.
Tidewater Supply Company, Inc
PASSAIC, N. J.
N. J. Engineering & Supp. Co.
PHILADELPHIA, PA.
Tristate Corporation
PITTSBURGH, PA.
R. G. Schenck (Representative) 614 Ridgefield Ave.
PORTLAND, ME.
Chase, Parker & Co., V. W. Everett, Representative, 104 Prospect St.
PORTLAND, ORE.
Goodyear Rubber & Asb. Co.
PROVIDENCE, R. I.
Farr & Read Company, Inc.
ROANOKE, VA.
Tidewater Supply Company, Inc
ROCHESTER, N. Y.
Sidney B. Roby Co.
SALT LAKE CITY, UTAH
Industrial Supply Co.
SAN FRANCISCO, CAL.
Miller & Stern Supply Co.
SAVANNAH, GA.
John D. Robinson Co. 11 Bay St., West
ST. LOUIS, MO.
Industrial Lubricating Co.
SEATTLE, WASH.
Chas. H. Harden & Co.
SPOKANE, WASH.
Nott-Atwater Co.
SYRACUSE, N. Y.
Baldwin-Hall Co.
TOLEDO, O.
Fiske Brothers Refining Co. (Plant & Office)
Kirby Mach. & Supply Co.
TRENTON, N. J.
Standard Supply & Equip. Co.
TROY, N. Y.
Fred K. Blanchard, Inc.
UTICA, N. Y.
Central N. Y. Sales Co.
WATERTOWN, N. Y.
W. W. Conde Hardware Co.
WILMINGTON, DEL.
W. Floyd Jackson Co.
WINTER HAVEN, FLA.
V. G. Modena
YORK, PA.
Geo. F. Motter's Sons Supp. Co.

FISKE BROTHERS REFINING CO., Newark, N. J. • Toledo, Ohio

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Fred Cross Is Sales Manager for Alemite

Fred R. Cross, director of advertising of the Stewart-Warner Corporation, Chicago, has been promoted to sales manager of the Alemite retail sales division, effective May 15. He has been connected with the company for 15 years. Appointed in 1924 as advertising manager for the Alemite division, he held that position until 1933 when he was placed in charge of all advertising as director of advertising for the Stewart-Warner Corporation and its subsidiaries. C. A. Fine, who has headed the Alemite retail sales division, will assume new duties in the Stewart-Warner organization, his position to be announced shortly.

Mr. Cross

◆

C. H. Reumann Now with National Drying Machinery Co.

C. H. Reumann, for many years connected with the Philadelphia Drying Machinery Company, has become associated with The National Drying Machinery Company, Hancock Street and Lehigh Avenue, Philadelphia, Pa., in a sales capacity. The company manufactures and designs drying, conditioning, carbonizing and conveying machinery.

◆

Textile Salesmen in Atlanta Organize

Sales representatives of textile mills with headquarters in Atlanta last month formed the Atlanta Textile Club, which will operate a monthly luncheon for the members and their guests, and a semi-annual social get-together. This is the first time in the history of textile representatives in Atlanta that an effort has been made to co-operate along these lines, and much benefit and mutual co-operation is anticipated. Visiting salesmen or representatives from other cities are invited to the monthly luncheon, on the first Monday in each month. The officers chosen for the remainder of this year are:

Garnett C. Robey, 10 Pryor St. Bldg., representing Riverside & Dan River Cotton Mills, president; Robert A. McKay, representing Wellington Sears Co., vice-president; and H. C. Allen, Jr., president, Sterling Textile Company, secretary and treasurer. There were 22 representatives in attendance at the organization meeting.

◆

Watson with Litchfield

Clifton E. Watson, Worcester, Mass., has accepted the position of general sales manager for the Litchfield Shuttle Company, Southbridge, Mass. Mr. Watson recently resigned as vice-president and general manager of the Watson-Williams Mfg. Company, Millbury and Leicester, Mass., a position he held since his graduation from Dartmouth College in 1922.

The Litchfield Shuttle Company plant is equipped to make all types of shuttles and specializes in the manufacture of fiber clad shuttles. The company will also handle the sales of other products allied to the weaving industry.

◆

Geist Vice-President of Allis-Chalmers

Walter Geist has been appointed vice-president of Allis-Chalmers Manufacturing Company, Milwaukee, Wis. He has been with the company since 1909, when he became an errand boy in the saw mill engineering department. He originated the idea of the multiple V-belt drive principle of power transmission, known as the Texrope drive.

Mr. Geist

◆

Carolina Yarn Association Elects New Slate of Officers

The Carolina Yarn Association held its annual meeting at the Charlotte (N. C.) Country Club on May 18, and elected officers for the ensuing year as follows: S. L. Diggle, Charlotte, president; Karl Ginter, Charlotte, vice-president; Penn. Wilson. Charlotte, treasurer; and H. T. Cosby, Charlotte, secretary.

After the business meeting, a golf tournament was held for the membership, and prizes were won as follows: First low net, Jack Holbrook; first low gross, S. L. Diggle; second low net, H. T. Cosby; second low gross, Bill Yates: third low net, P. H. Thompson, third low gross, Fred Sails; fourth low net, John Sherrill; fourth low gross, Fred Lemmond. Attendance prizes were won by C. W. Causey, Jr., and Penn. Wilson.

◆

Smith with Piedmont Color

Edward W. Smith, formerly sales manager for William McLeod, Inc., and at one time superintendent of the Burlington rayon mills, Central Falls, N. C., has resigned his position to become representative for the Piedmont Color & Chemical Company, Inc., High Point, N. C., makers of oils, soaps, finishes, and bleaches.

◆

New Mill Supply House

C. W. Farmer, 468 Broadway, Macon, Ga., has established a general mill supply business under the managership of T. H. Humphreys, formerly of J. S. Scofield & Sons, Macon. The company will contact the trade within the approximate radius of 200 miles of Macon, offering a general line of mill supplies. Mr. Humphreys has been with the Macon Supply Company as well as with Scofield. Mr. Farmer will continue to cover the five states he has formerly traveled selling his own brand of rubber belting, hose, and packing, as he has done in the past.

◆

Wysong & Miles Mill Supply Co.

The Wysong & Miles Mill Supply Company has been granted a charter in the state of North Carolina, and will have offices at Greensboro. This company is an entirely separate organization from the Wysong & Miles Company, manufacturers of mill machinery and supplies. The new company, it is understood, will act as selling agent for the manufacturing company, in addition to handling mill supplies generally. Incorporators are McDaniel Lewis, Russell F. Hall, Richard C. Remmey, and Ernest M. Remmey, all of Greensboro, N. C.

◆

News of Link-Belt

Several items of interest to friends of Link-Belt Company, 307 N. Michigan Ave., Chicago, Ill., have been announced.

Kenneth C. Ellsworth has been made manager of the stoker eastern division, with headquarters at Philadelphia. He has been affiliated with this division almost since its inception.

Speeder Machinery Corporation, Cedar Rapids, Iowa, manufacturers of excavating and materials handling cranes, etc., and the shovel division of Link-Belt have been consolidated. This merger will make available to the trade a complete line of this type of equipment. For the present the two organizations will continue to operate independently.

HOW TO GET LONGER LIFE FROM YOUR ROLL COVERING and STILL have a product that can pass the 12 POINT TEST

So many claims have been made regarding the durability of substitutes for leather roll covering, that longevity is seldom associated with leather itself. Therefore, it may surprise many mill men to know that Gilleather, in addition to passing the 12 POINT TEST with honors, has effected some startling gains, as to length of service, in certain instances.

A case in point is a New England mill, which 18 months after changing to Gilleather, has reduced its roller shop crew by 2/3.

Longevity isn't the most important thing in roll covering. In fact if it can be obtained ONLY by sacrificing one or more requirements of the 12 POINT TEST, it should be ignored entirely. However, that's the advantage of Gilleather; it gives much longer service than is ordinarily expected of leather WITHOUT sacrificing any other necessary qualification.

Use Gilleather, follow our periodical dressing and calendering instructions, and you'll be surprised how long your roll covering will last and how little it will cost.

THE 12 POINT TEST
GILLEATHER Can Pass on All 12 Points

1. Does it automatically stop spinning when it makes bad yarn? ● 2. Does it retain its cushion and resiliency in low temperatures, as over the week-end in winter and as long as it will draft? ● 3. Does it resist flattening or fluting over the week-end? ● 4. Does it require a standard diameter arbor, thus eliminating costly changes? ● 5. Is it impervious to excessive humidity? ● 6. Does it produce a minimum of eyebrows? ● 7. Does it eliminate lap-ups as long as it will make good yarn? ● 8. Does it eliminate cockled yarn, other factors being correct? ● 9. Does it produce yarn of maximum strength for a given staple, other factors being correct? ● 10. Does it require a minimum of attention? ● 11. Does it function properly ALL the time until worn out? ● 12. Has time proved it any better than the 600 odd "improved" roller coverings that have come and gone?

GILL LEATHER COMPANY

SALEM, MASS.

Southern Representatives:

Gastonia, N. C. . . . . W. G. Hammer
Greenville, S. C. . . . . W. J. Moore
Greenville, S. C. . . . . Ralph Gossett
Griffin, Georgia . . . . . Belton C. Plowden

GILLEATHER SHEEP and CALF SKIN *for* TOP ROLLS

Meetings on Textile Research and Education

Photograph of group discussing research and education in South May 1-6, under auspices of The Textile Foundation. Photograph made at Georgia Tech by John C. Fonville of "Cotton". Left to right: Hiram S. Davis, Edward T. Pickard, George W. Taylor, Stanley B. Hunt, Warren E. Emley, and Frederick M. Feiker . . .

Under the auspices of The Textile Foundation and the southern textile schools, a group of specialists in textile research and education conducted a tour of meetings through the South during the week of May 1, speaking on these subjects. The purpose of the meetings was to acquaint textile executives and educators with work being done, under the auspices of the Foundation and otherwise, in the fields of management, merchandising, education, studies on integration in the textile industry, etc. The first meeting was at Auburn, Ala., on May 1, followed by meetings at Georgia Tech in Atlanta on May 2, Clemson College May 3, and N. C. State Textile School, Raleigh, May 5. Those participating included: Frederick M. Feiker, who is in charge of the Foundation's educational program; Edward T. Pickard, secretary of the Foundation; George W. Taylor and Hiram S. Davis, of the Wharton School of Commerce and Finance, University of Pennsylvania; Stanley B. Hunt, of Textile Economics Bureau; and Warren E. Emley, of the National Bureau of Standards, Washington, D. C.

◆

Martin Joins Aridye

John C. Martin has resigned as manager of the finishing department of the Ware Shoals (S. C.) Manufacturing Company to join the Aridye Corporation, Fair Lawn, N. J., as sales representative for New England. Mr. Martin had previously been associated with the Hartsville Print and Dye Works, the Pontiac Finishing Plant, and the U. S. Finishing Company.

◆

Philip Lavoie Joins Arnold, Hoffman Service Staff

Arnold Hoffman & Co., Inc., of Providence, R. I., have added Philip Lavoie to their staff as technical demonstrator of sizing, printing and finishing specialties. Mr. Lavoie, formerly superintendent of finishing for Mount Hope Finishing Co., plant manager for Imperial Printing and Finishing Co., contact man for U. S. Finishing Co., and plant superintendent of Lincoln Bleachery and Dye Works, has for the past four years been demonstrator and salesman on wool finishing and scouring for Arkansas Co. He will make his headquarters in the Providence office of Arnold, Hoffman & Co., and will travel throughout the South.

◆

Arthur L. Jenkins Honored at Dinner

Arthur L. Jenkins, treasurer of the Emmons Loom Harness Company, Lawrence, Mass., was honored recently at a testimonial dinner commemorating his 50th year in the company's employ. Mr. Jenkins, born in Lawrence in 1873, began work with the Emmons company at the age of 16, becoming a director at 24. After serving in that capacity for 12 years, he was appointed clerk of the corporation; became assistant treasurer in 1923 and treasurer in 1935.

Mr. Jenkins

◆

Westinghouse News

Marvin W. Smith, manager of engineering of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has been elected vice-president of the company. Mr. Smith will direct all the company's engineering activities; he has been associated with Westinghouse since he left college in 1915.

Mr. Smith

R. B. Mildon, vice-president of the company, will move from the East Pittsburgh Division to Pittsburgh headquarters, where he will assume special sales assignments. He has been associated with the company since 1906 and has been vice-president since 1934.

A. C. Streamer, formerly manager of the switchgear division, has been appointed general manager of the East Pittsburgh division. He graduated from Colorado State University and has been with Westinghouse since 1907.

W. F. White has been made manager of the lighting division. He is chairman of the Cleveland section of the Illuminating Engineering Society.

◆

American MonoRail Re-Opens Charlotte Office

The American MonoRail Company, 13107 Athens Ave., Cleveland, Ohio, has re-opened its southern office at 214 Johnston Building, Charlotte, N. C. Lewis H. Fallis is in charge of the southern office.

◆

15-Year Club at National Oil Products

National Oil Products Company, Harrison, N. J., has formed a 15-Year Club, composed of employees that have had at least 15 years of continuous service with the company. The members receive gold medals and one extra week's vacation with pay. The same rule will apply in subsequent years. It is expected that within five years the club will have over 100 members. The purpose of this club is to promote a greater spirit of friendship and co-operation among the employees of the company. C. P. Gulick, chairman of the board of the company, is the oldest employee, having 32 years of continuous service. Membership is open to all classes of employees, with service the only limitation.

◆

Hatch Research Moves

It has been announced that Hatch Textile Research, Inc., has moved to 25 East 26th Street, New York City.

◆

Changes in Gilmer Sales Organization

Matthew R. Oberholzer has been promoted to sales manager of the L. H. Gilmer Co., Tacony, Philadelphia, Pa., in charge of sales of all of the company's lines, consisting of V-belts, and fabric and rubber-fabric flat belts and belting.

A. K. Schindewolf, of the Gilmer Philadelphia staff, has been made district manager for Louisiana, Mississippi and Arkansas, with headquarters in New Orleans. In the Chicago territory, in charge of Andrew B. MacFarland, division manager, the following salesmen have been assigned new territories: O. K. McCullough, district manager for Kansas and western Missouri, with Kansas City headquarters; and Cliff T. Pilkey, district manager for eastern Missouri and southern Illinois, operating from St. Louis.

Additional Personal Notes

W. H. Cobb, for the past several years general factory manager of the mechanical goods plants of the U. S. Rubber Co., has been made general manager of the mechanical goods and general products divisions, including the supervision of the manufacture of Lastex yarn and rubber thread. Herbert E. Smith, vice-president, will continue supervision of all activities of the divisions.

John W. Kaneer, who started the St. Pauls Cotton Mills in 1908, and has recently been a salesman of machinery, has become superintendent of these mills.

J. Z. Lancaster, formerly overseer of carding at the Pacolet (S. C.) Manufacturing Company, has been promoted to assistant superintendent of Plants 3 and 5 of this company, also located at Pacolet.

H. C. Brown of James Talcott, Inc., has been elected president of the Naushon Mills, Inc., New Bedford, Mass., succeeding Ralph C. Perkins, resigned. Herbert H. Pepler is now vice-president.

Herbert Siegmund has been made overseer of wet and dry finishing at the Malden Spinning & Dyeing Company, Malden, Mass.

J. M. Pike, who since his graduation from the textile school of the Alabama Polytechnic Institute, has been in the New York laboratories of Ciba Company, has been transferred to the company's offices at Charlotte, N. C.

Obituary

Peter H. O'Neill, for the past 20 years overseer of weaving at the Merrimack Mfg. Co., Huntsville, Ala., passed away at 81 years of age on May 12. Mr. O'Neill, the father of John H. O'Neill of Atlanta, was a native of New England, but had been located in the South for about 50 years.

Emslie Nicholson, 76, who had retired just a few days before as vice-president and treasurer of Monarch Mills, Union, S. C., passed away on May 22 at his home in Union.

Charles W. Rusk, assistant to the advertising manager of Proctor & Schwartz, Inc., Philadelphia, passed away unexpectedly April 22, at the age of 57. He had been with the company for over 20 years.

Arthur B. Ball, 76, former secretary of the Silk Association of Great Britain and Ireland, now being reconstituted as the Rayon and Silk Association, Inc., died recently as the result of an automobile accident last November.

John A. Porter, 68, retired head of the manufacturing department of Bibb Manufacturing Company, Macon, Ga., succumbed to an attack of the heart recently in Orlando, Fla.

Dr. W. E. Phifer, Charlotte, N. C., passed away recently. He was president of Morganton Full-Fashioned Hosiery Mills, vice-president of Alpine Cotton Mills, and a director of Dacotah Cotton Mills.

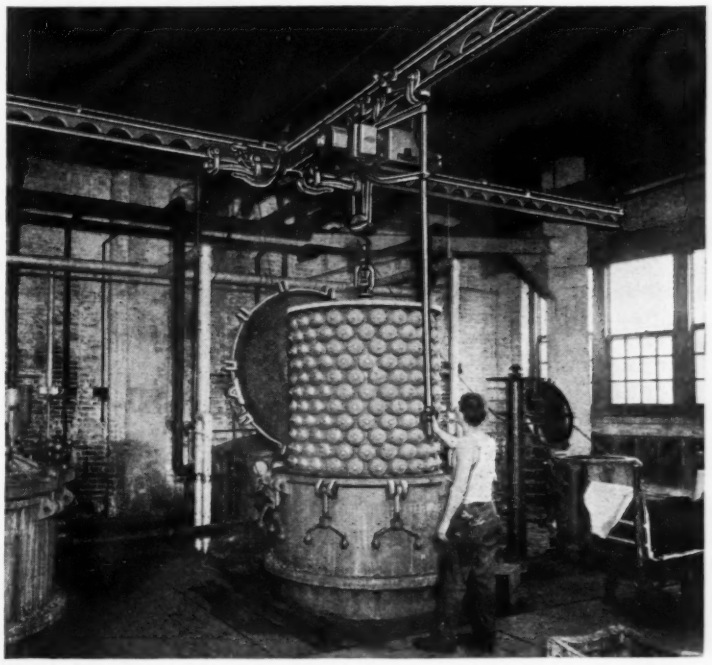
William Louis Greene, treasurer and general manager of the Woonsocket (R. I.) Napping Machinery Company, passed away early in May.

Edward E. Partain, 48, owner of the Par-Tex Hosiery Mills, Dallas, Tex., died the early part of May.

Burns A. Robie, 65, president of Whitehall Knitting Mills, passed away recently in Philadelphia.

CLEVELAND TRAMRAIL

OVER HEAD HANDLING EQUIPMENT



● In the textile industry Cleveland Tramrail has assisted many plants on the road to progress. Regardless of the department or the product our engineers have the back ground of experience to help solve some of your problems.

● For package dyeing — A Cleveland Tramrail hand propelled crane and carrier with motor operated hoist. The control of the crane and carrier is in the hand of the operator—a push or a pull and the pressure of the thumb.

ALSO BUILDERS OF CLEVELAND CRANES ALL WELDED

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DIVISION OF

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PERSONAL NOTES
about Men You Know

Left, FRED A. RIDENOUR, *who, as announced in these columns last month, has become associated with the sales department of the Atlanta office of Draper Corporation, succeeding John H. O'Neill. Mr. Ridenour has been in the Draper Atlanta office for several years.*

Right, FRED W. SYMMES, *of Greenville, S. C., president of Union-Buffalo Mills Company, who, as reported last month, was elected second vice-president of the American Cotton Manufacturers Association at New Orleans.*

FRANK L. ASBURY, JR., has resigned as general superintendent of Gossett Mills, Inc., Anderson, S. C., and become connected with Eagle & Phenix Mills, Columbus, Ga., general superintendent.

DAVID W. ANDERSON, Spartanburg, S. C., president of the Pacolet Manufacturing Company, has become vice-president and treasurer of the Monarch Mills, Union, S. C., succeeding the late EMSLIE NICHOLSON.

J. V. MCCOMBS, for several years superintendent of the Pilot Mills Company, Raleigh, N. C., has resigned to become associated with Quaker Chemical Products Corporation, Conshohocken, Pa., and will represent the company as its southern agent in South Carolina, Georgia, and East Florida.

JIM C. EDWARDS for many years general superintendent of Martha Mills, Thomaston, Ga., and more recently general superintendent of the Morgan Cotton Mills, Laurel Hill, N. C., has realized his ambition and that of many other textile executives. He has retired from the mill business and is taking up residence in Florida, where it is reported that he is catching up on his fishing.

BENTZ S. HOWARD, for several years director of designing in the Spray (N. C.) office of Marshall Field & Company, has been made superintendent of the Spray (N. C.) Woolen Mill unit of this company. He will direct piece goods design for the mill. JAMES B. LAMAR will have charge of domestic designing and sample work.

P. A. GWALTNEY, McCall, S. C., has been elected chairman of the board of the Marlboro Cotton Mills of that city, succeeding D. K. MCCOLL, who resigned as both chairman and treasurer. DAVID D. CARROLL, Bennettsville, S. C., was made treasurer.

HAROLD A. DEAL, formerly with the No. 2 plant of Judson Mills, Greenville, S. C., has been made superintendent of the Cornelius (N. C.) Cotton Mills.

J. M. MCNUTT, vice-president of the Golden Belt Manufacturing Company, Durham, N. C., has been elected president succeeding the late GEORGE W. HUNDLEY. GEORGE W. HUNDLEY, JR., was made vice-president in charge of sales.

WILLIAM M. GROSSE, as announced in the May issue of COTTON, has been placed in charge of the Marion and Chilhowie units of the Wallner knitting interest. Mr. Grosse formerly was with Greensvoro (N.C.) Full-Fashioned Hosiery Mills. ALBERT MARRIOTT, Bloomfield, N. J., has assumed superintendnecy of the Salem Full-Fashioned Hosiery Mills, Inc., and BENJAMIN S. BELLEMERE, Syracuse, N. Y., will serve as personnel director of the entire Wallner knitting interests.

P. P. MURPHY has resigned his position with the Peerless Cotton Mill, Lowell, N. C., to become president of the United Spinners Corporation, of the same city.

L. G. Moss, formerly associated with the manufacturing division of Marshall Field & Company, Draper, N. C., has been made assistant superintendent of the Monaghan plant of the Victor-Monaghan Company, Greenville, S. C.

J. R. BROWN, for many years superintendent of the Stonewall (Miss.) Cotton Mills, Inc., has become superintendent of the J. W. Sanders Cotton Mills, Plant No. 3, Meridian, Miss. Other changes at this plant include, W. F. GASTON, formerly of Laurens, S. C., as overseer of the cloth room; J. W. MOORE, formerly of Prattville, Ala., overseer of carding; and W. C. FRAZIER, formerly of Opp, Ala., overseer of weaving.

CLAUDE L. WYRICK has been made manager of Lola Mills, Stanley, N. C., succeeding the late I. E. CRAIG.

C. J. MEAGHER, formerly of the Cleveland Cloth Mills, Shelby, N. C., has become superintendent of the Dacotah Cotton Mills, Inc., Lexington, N. C., succeeding A. FRANK BRUTON, resigned.

W. T. MORTON, formerly of the American Spinning Company, Greenville, S. C., has accepted the position of overseer of spinning, spooling and warping at the Borden Mills, Kingsport, Tenn., of which W. J. Still is vice-president and general manager.

ALEX TURNER, formerly assistant superintendent, has been made superintendent of the Avondale Mills plant at Alexander City, Ala., succeeding the late JAMES L. BYERS.

MASON STUDDARD, formerly with the Eagle & Phenix Mills, Columbus, Ga., has become connected with the bleaching department of the Werthan Bag Corporation, Nashville, Tenn. He is a graduate of the Alabama Polytechnic Institute's textile school.

JAMES D. ORR, formerly with the Callaway Mills, is now in the testing department of the Stark Mill Division of the U. S. Rubber Products, Inc., Hogansville, Ga. Mr. Orr graduated in textiles from the Alabama Polytechnic Institute in 1937.

ROBERT T. JAMES, who has been night overseer of carding at the Bama Cotton Mills, Enterprise, Ala., has been promoted to general overseer of carding at this plant, succeeding L. M. SAXON, who is now connected with Jordan Mills, Inc., Columbus, Ga. ERNEST A. CRADDOCK, for several years with the Anchor Duck Mills, Rome, Ga., but recently of the Alabama Mills, Inc., Dadeville, Ala., has accepted the position of night overseer of carding at the Bama Cotton Mills.

C. S. LEIGH, formerly assistant superintendent of the Erlanger (N. C.) Cotton Mills, has become assistant manager of the plant. Other promotions include R. H. HOPE from overseer of weaving to superintendent, J. C. CHILDRESS from designer to overseer of weaving, and E. L. HOWELL from assistant designer to designer.

(Additional personal notes and obituary items on page 97.)

EVEN SELVAGES ON BARBER-COLMAN BEAMS HELP TO IMPROVE SLASHING

Section beams wound on the Barber-Colman SUPER-SPEED WARPER have even selvages, as shown in the photograph at the right. Accurate control of running threads on the warper produces low and uniform tension, which eliminates slack ends and prevents "high selvage" or "low selvage". This results in improved slashing and better running weaving.

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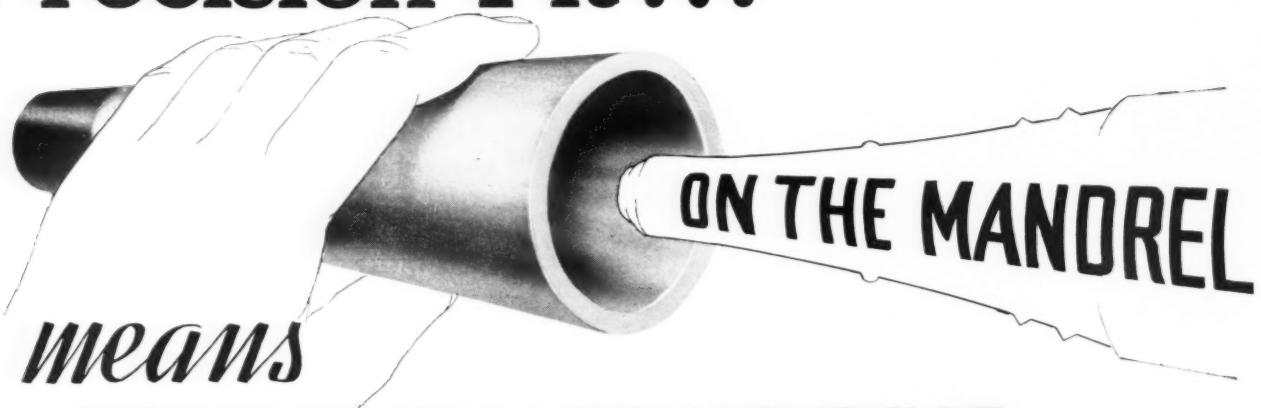

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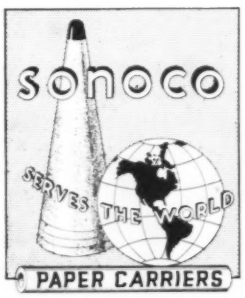

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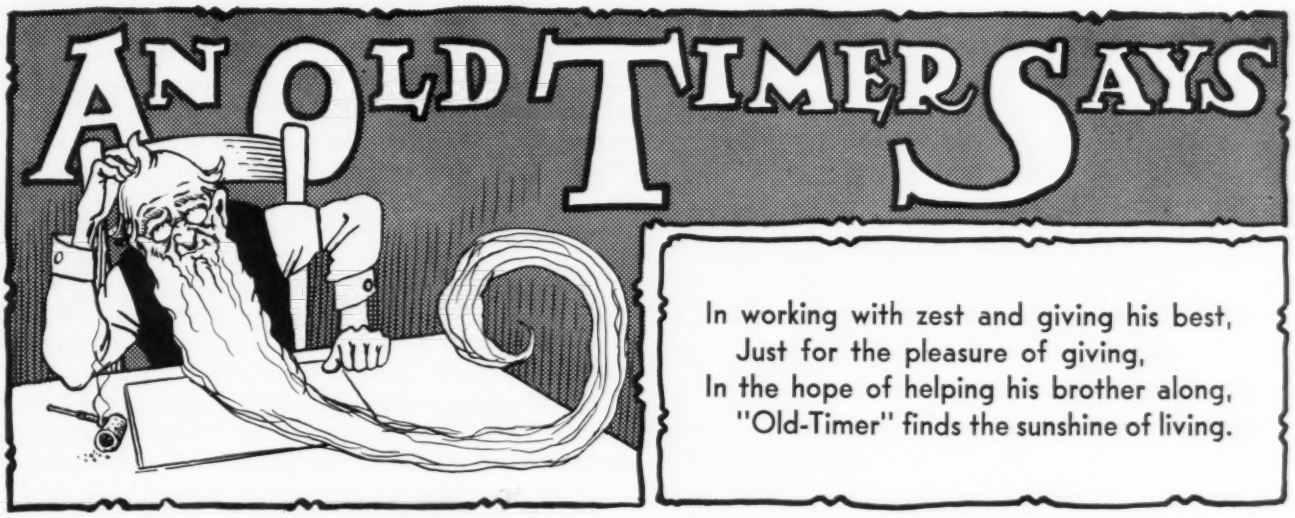
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

"Somewhere in South Carolina"

(The Editor Still Pinch-Hitting for "Old-Timer")

(This continues the discussion between OLD-TIMER'S friend JIM and the editor with reference to the OLD-TIMER page, which was begun in the April issue and continued in the May issue. Since this is written in conversational style, it should be borne in mind that those paragraphs in *italics* represent JIM'S part of the conversation and those in regular type represent the editor's remarks.)

Hello, JIM!

Good morning, Mr. Editor. I'm glad to see you. I had no idea I would see you so soon after the Greenville Textile Show.

Neither did I, JIM, but one of the mills in this section, in fact, not so very many miles from you, has developed some new ideas on carding from which they seem to be getting pretty good results and I wanted to get some definite information for our readers. Therefore, as I had to make this trip to see that mill, I decided it was a good opportunity to drop in on you for a continuation of our conversation concerning OLD-TIMER.

Fine, Mr. Editor, but before we get started on that, tell me something about those new ideas on carding—

Not so fast, JIM. I thought you knew our policy better than to ask such a question.

What do you mean, Mr. Editor, isn't it all coming out in your magazine?

No, JIM, not until they give me permission to publish it. In fact, it will never be published until they do give me permission.

Then what in heck did you make this long trip up here for?

Information, JIM—manufacturing information. You see, having contact with practically all of the mills, especially here in the South—the management of the mills realize that oftentimes when they work out a new system or a new method of manufacturing, although that method or system may be working wonders, at their particular plant, it may not be so wonderful in its application and results at another plant on account of some local condition. Therefore, they are glad to have someone, in whom they can place confidence not to divulge what he sees, to look over the new idea and criticize it for them.

You know, when the average man gets what he thinks is a new idea he at once can visualize it revolutionizing the whole textile industry and he is afraid for anyone to see his ideas in use, but the man of more practical experience realizes that usually he can obtain helpful information from constructive criticism by a person who is not trying to get his idea and is honor-bound not to use the information in any way that would be detrimental to his interests.

Then you are not like some of the newspaper reporters who will grab anything and publish it in order to get what they call a scoop. I just read a magazine article about a kidnap case the G-men were working on and a daily paper published the information that the contact man was instructed to pick up a letter the kidnapers had placed for him—read the instructions, then come out in plain view and burn the letter. The man read the letter, then slipped the letter into his pocket and burned the envelope; when this was published in the morning papers, the kidnapers realized they had been double-crossed and were likely to be caught and because they knew the kidnaped young man could identify them, they killed him and fled.

No, JIM, we can't work that way. Of course we are always on the lookout for manufacturing ideas which we can give our readers the benefit of, but we cannot afford to betray a confidence in order to publish anything.

Okey, Mr. Editor, then we will take up our conversation about OLD-TIMER. *You remember we were discussing that article he wrote entitled "Don't Let Your Temper Cost You Money."*

That's correct, JIM, and sometime after that article was published and after he had used the idea for several talks where he would be called upon at some meeting, he added the words "Or Friends", to that title and made it read: "Don't Let Your Temper Cost You Friends Or Money", and many readers thought

the articles based on this thought were outstanding—you might say above the average, and probably they did bring as much response and obtained as good results as any articles he had published up to that time.

The main thought he tried to bring out was very well illustrated by one of the first systems OLD-TIMER inaugurated when he was made an overseer. He was a very young man—in fact not 20 years old—when he was made overseer of a new weave room. He explained that one of his first thoughts was to find out how to hold his job and to find that out he started a system to find out why most overseers and superintendents *lost* their jobs.

He said even with what little experience he had in the textile business he had already found out that many overseers and superintendents did not lose their jobs because they were not capable overseers and superintendents, that is, not because they did not know how to run their jobs, but lost out for various other reasons. And the important fact revealed by his research was that the reason why those men lost their jobs were not the reasons which most men would suspect.

Sure, Mr. Editor, back in those days most of us thought that more men lost their jobs on account of liquor and women than from all the other causes.

That's where you were wrong, JIM. OLD-TIMER'S system proved that more men lost their jobs from an uncontrollable temper than from all other causes combined, and that was the information upon which he conceived the title "Do Not Let Your Temper Cost You Friends or Money". I only wish time would permit us to go more into detail on this subject, but if the reader will only go back over his own personal experiences from the time he was a 16-year-old boy—then through school and into every business and social experience he has ever had—and see for himself how many times he has lost friends on account of his temper—how much money he has lost by a hard-headed temper—how much better he would have gotten along with his work if he hadn't been mad at somebody—either a co-worker or his superior—how often his jealousy, which is a form of temper, has hurt him many times more than that jealousy or temper hurt the other fellow. In fact, a man's temper or jealousy is like a boomerang—it rarely ever hurts the fellow you are mad with but usually does hurt you. Any prize fighter can tell you that if he can only say something to make his opponent mad—to get him to lose his temper—then he stands a much better chance to win the fight.

Then, JIM, I never will forget the article entitled "A New Experience or An Honest Confession", because in preparing that article for publication I all at once realized that it was a good lesson to me because it expressed a situation in which most men find themselves at times, and I wrote OLD-TIMER a personal letter complimenting him upon his practical philosophy.

So you editors are human beings too, I suppose.

Sure, JIM, I get as much pleasure out of many of our contributors' articles as many of you readers do. In fact, I had had so many experiences with men along the lines of OLD-TIMER'S article just referred to that I told him in my letter that those experiences demonstrated the truth of his statements.

You see, JIM, oftentimes after reading an article or articles in the magazine, if those articles are put into book form, you will read them again and get a new thought. For example, here is a letter from an overseer at a bleachery who says: "Lots of the articles I had already seen in COTTON, but I must say it helps me very much to read them again. It seems to always give me new courage and ambition with a greater desire to run my job better than before, just to pick up the little book (of OLD-TIMER'S articles) and re-read some of those articles makes me want to be more efficient on the job. I prize my copy very highly and am looking forward to receiving Volume 2."

But here is a different thought in this letter, JIM, which is dated February 23, 1933: "I have just finished reading 'An Old-Timer Says' Vol. 1 and want to say when I get down in the mouth and all blue, all I have to do is get this book and read a few articles and I'll be pepped up a plenty."

Yes, Mr. Editor, that explains somewhat OLD-TIMER'S *reasoning about the English language. You remember he got all hot and bothered trying to make me see that he could make a man dead or alive and still use the exact words in the sentence he would use to tell it.*

Now here's one you'd hardly believe, JIM. It is from a college graduate, in fact the letter, dated February 22nd, 1933, states the writer was in college with and a classmate of OLD-TIMER'S son, but by golly he is requesting one of OLD-TIMER'S study courses. His request was prompted by an OLD-TIMER article which brought out the fact that a man should continue to study after he graduates.

Yes, that's the first time I have ever heard of a college graduate asking for the OLD-TIMER *study course, Mr. Editor. In fact, it is almost like a lawyer asking for the* OLD-TIMER *series of articles on "Points of Law Which a Mill Man Should Know."*

Exactly, JIM, I have forgotten the details, but the editor of one of the daily papers in a large city read some or all of those "Points of Law" and made editorial comment about them, and a lady property owner in that city, after reading the editorial in the daily paper, wrote OLD-TIMER and thanked him for giving her information concerning a point of law which applied to a piece of property she owned.

You know, Mr. Editor, I claim the credit for OLD-TIMER *writing those articles.*

How's that, JIM?

Simply because along about that time, OLD-TIMER *was lecturing me about not saving any money and persuaded me to buy a piece of property on credit. Then I asked him so many fool questions about borrowing money, about mortgages and about other things that he could not give me intelligent answers on, that he bought a course in commercial law and studied it over a year before writing those articles. That's why I say that I deserve the credit for them.*

Maybe so, JIM, but I'll bet OLD-TIMER himself really got more benefit from that study he made in order to prepare those articles than anyone else did. Anyway, JIM, it will pay any man to study those articles because they are really based on actual cases which

(Continued on page 110)

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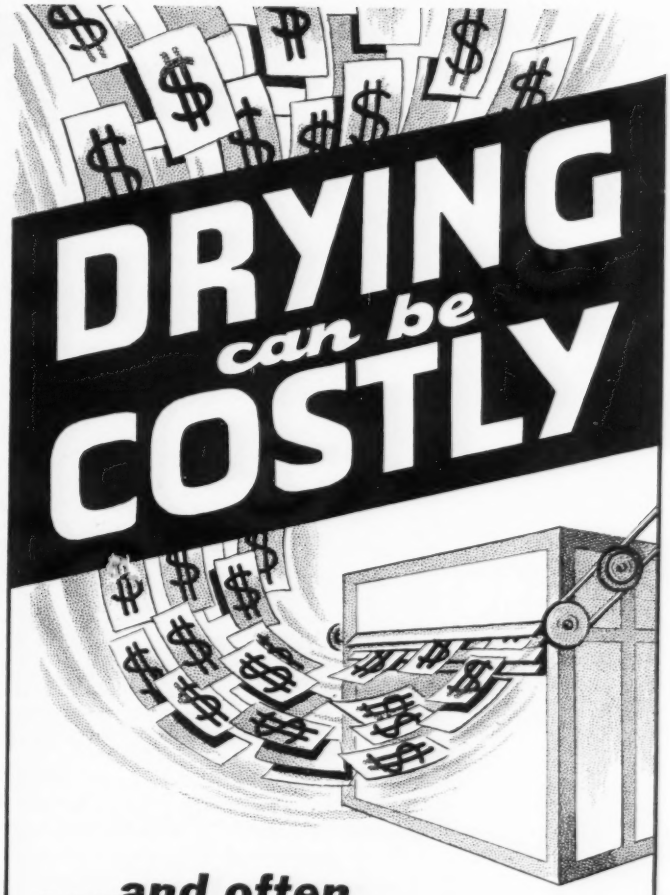

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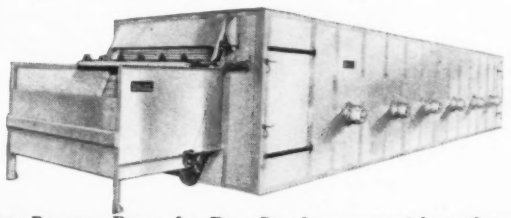

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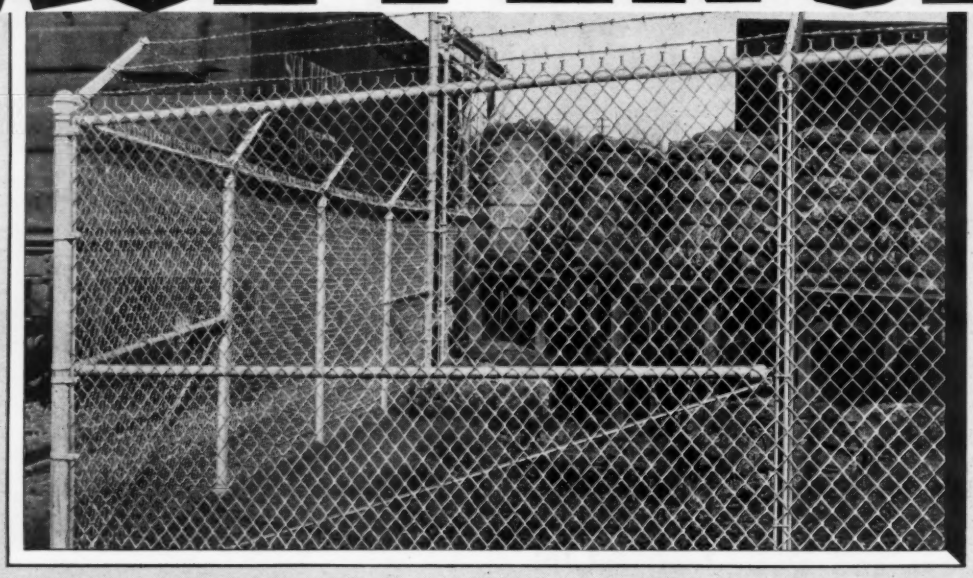

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HOW OTHER MEN MANAGE

What is Lay Per Inch on Spinning and Twisters?

EDITOR COTTON:

We have some questions regarding the lay on spinning and twister bobbins, which we shall greatly appreciate your readers answering for us.

1. With regard to spinning, what is the best lay per inch for a given count for spooling and high-speed winding?

2. With regard to twisters, what is the best lay per inch for a given count for spooling and high-speed winding?

3. Has anyone developed a multiplier for the most satisfactory number of lays per inch for a given count?

4. What part of the bobbin is the most critical or gives poorer work for high-speed winding, the bare bobbin or the full bobbin?

CONTRIBUTOR NO. 6925

Defends Research Department

EDITOR COTTON:

"WASH (R. I.)" is defending his question "Does it pay to have a research department?" which he answered himself on page 95 of the March 1938 issue of COTTON, or rather which is answered by reading between the lines of his argument.

In my opinion a research department which is properly organized will more than pay for itself in any mill that has 1000 or more looms. The men employed in this department should be the pick of the crop, specialists in their own fields, and not men just out of school, whether it be high school, textile school, or institute of technology. However, if the men employed have had technical training and then have had practical experience, they will be more valuable on the research job.

The men in the research department must be well versed in every operation and process of the mill—that is, the personnel of the department must be so picked that at least one man will be thoroughly familiar with each department of the mill. While it is possible that one man may have a general knowledge of all work being done, I do not believe this man would have enough practical information to meet all problems.

There should be at least two men in the research department. One man could handle the research in the yarn departments, which includes sampling and grading of cotton. He should understand cotton opening, mixing, picking, carding, combing, etc., and should be capable of setting any or all of these machines, if need be, to suit his testing methods.

I think the research man handling yarns should concentrate upon ways and means for manufacturing better yarns. In this capacity his work should be entirely experimental and without disorganizing the work of the department, overseer, and section men. In other words, the carding and spinning departments are to continue with their regular routine without interference. Whatever suggestion or criticism the departments are to receive from the research department should be given to the superintendent who in turn will pass the suggestions along if he deems necessary.

The other man in the two-man research department should handle the departments from warp preparation through cloth room. He should understand every operation, be a good cloth grader, and work in the same capacity as his associate, only in other departments.

He should make a complete checkup of the departments and the cloth woven, the predominating faults determined and traced. One fault should be taken at a time and he should report his findings to the superintendent without fear of or prejudice to any department. This will prove to be no easy job, but will be most beneficial if done conscientiously.

As I have outlined the duties of the research department, it serves to place the blame unbiasedly where it belongs. This eliminates the constant dickering between overseers who blame each other for defects; meanwhile the trouble continues. The foregoing should be routine work. From this point the functions of this department should be of a creative nature. This might consist of: (a) Finding new methods for producing old results; (b) Finding new methods for producing new results.

Under (a) we would consider any changes in routine, layouts, drafts, settings, etc., that will produce the same product with less effort and cost. The new method should be simpler than the old.

Under (b) would be considered new effects in yarns or fabrics to stimulate the business of the mill. It is agreed that this may be the job of the designer, but does he have the time? Most of the time he has his hands full working out ideas for customers, that, in most cases, never materialize in new business. This is usually a goodwill gesture toward the customer. The research department will have no "hurry up" customer on its back. It will be able to work without interference. The modern mill must be prepared with a new line of goods to substitute for those that have become highly competitive, and on which prices have been cut to the bone. A new line affords a higher margin of profit until others cut in.

In this portion of the research department's functions would come experimenting, recording, and per-

fecting of processes. When the desired results are accomplished, all records should be used to instruct the departments concerned. This will enable the productive departments to be prepared to handle the new product.

There is still another function of the research department—analytical in nature. This would consist of: Sampling cotton for grade, color, staple, moisture, strength, etc.; making sizing tests from every operation, noticing twists and evenness; checking atmospheric conditions throughout the mill; making end-breakage tests for all operations; taking machine surveys; testing cloth for quality, weight, and proper construction; checking moisture and size content in slashed yarn; determining moisture and size content in woven cloth; making analyses of water, starches, dextrines, oils, tallows, etc.; analyzing novel fabrics; analyzing fibers; analyzing defects in yarn and cloth; and checking breaking strength in yarns and fabrics.

P. R. K. (MASS.)

Size of Roving Bobbin—Spinning Ends Down

EDITOR COTTON:

Your "CONTRIBUTOR NO. 6894" raises the question on page 121 of the February issue on the variation in ends down per 1000 spindle hours in spinning due to roving coming from different parts of the bobbin. There seems to be some difference in this, yet it is difficult to attribute it to any one cause. We frequently creel one or more frames with new roving, then run an eight hour ends-down test each day until all the test roving is used up. This test may be further divided by separating the ends down with one hour periods and comparing these. From tests of this kind it is evident that the amount of roving on the bobbin does have something to do with the number of ends down per 1000 spindle hours. Yet this influence is so small that it is often offset completely by some other factor such as cleaning or oiling the rolls of the spinning frames or by some sudden change of the humidity conditions.

With everything as nearly equal on the test as possible, in the spinning there will usually be a few more ends down on the outside of the bobbin due to handling at speeder or roving frame, creeling in spinning, packing, or storing away, or allowing roving to become dried out.

The average cone gives a tension curve which starts off on the tight side and gradually slacks off until the roving is slackest at about ⅜ full. With the roving first going on the wood of the bobbin and also being under some tension, some stretch or variation is introduced. This tends to cause the number of ends down to be greater at the time when the bobbin is nearly empty. From about ⅜ full the tension begins to get tighter and continues to do so until the doff is completed. This increase in tension toward the latter part of the bobbin stretches the roving slightly, yet this may be enough to cause an appreciable difference in the number of ends down, especially when the outside may have been subjected to rough handling after doffing. When the bobbin is small, the counter balance weight on the presser swings in a large circle thereby exerting a greater pressure when the bobbin is being built up to the ⅜ full point.

From these observations it would seem logical to expect an increase in spinning ends down in the first and last quarter of the bobbin over those of the middle half.

In order to get an accurate test the roving should be broken up in the creel so as to have bobbins of all sizes. This is required where the test is to be run over an indefinite period of time.

CONTRIBUTOR NO. 6915

Battery Filler's Job

EDITOR COTTON:

I wish to submit my answer to the question asked by "CONTRIBUTOR NO. 6848" on page 89 of the July issue of COTTON, wherein he requests information on the number of batteries that should be given to a battery filler when the quill runs 8 minutes and 10 seconds in the loom and the battery fillers have little trucks to work from. The battery fillers have no odd jobs to do.

A number of items should be considered in calculating the number of batteries to a battery filler's job. First, the condition of the filling when the battery hand gets it. If the doffer when slacking the ends on the spinning frame before doffing does not place the ringrail low enough it will allow several rounds of filling to be wrapped around the butt end of filling quill, which takes up quite a bit of the battery filler's time in unwinding.

Second: An advantage to battery fillers is to have the filling placed in the battery trucks with all the quills turned in the same direction. This will require a truck slightly wider than the length of the quills.

Third: Neither the speed of the loom nor the number of filling will have to be considered, but the average length of time the filling runs, and the percentage of refills are all that are necessary in figuring out job sizes for battery hands, if there is no other work connected with the job.

Time study will show how many bobbins per minute a battery filler can place in the batteries. After finding this, time for walking, changing trucks, and for resting will have to be allowed. Therefore, if the average bobbin per minute per operative is found the rule used to find the number of batteries per operative should be simple.

For example, length of time filling will run, 8 minutes; bobbin per minute placed in batteries (average) 12; percentage refills, 10 per cent; walking, changing trucks, and rest time, 20 per cent; then:

$$\frac{12 \times 60 \text{ (minutes in hour)} \times .90 \times .80}{8} = 65 \text{ batteries to the battery filler.}$$

CONTRIBUTOR NO. 6883

Picker Speeds and Settings

EDITOR COTTON:

This is in answer to your question by "CONTRIBUTOR No. 6790", which appeared on page 101 of the March 1938 issue of COTTON. For the sake of clarity the question is repeated here:

EDITOR COTTON:

About two years ago we installed the one-process picking unit and to date all of the speeds, settings, beats per inch, etc., are just as the installation man left them. We are getting fairly good results from this process and our yarn breaking strength stays reasonably close to standard; however, we think that we would get better results in cleanliness and breaking strength if our settings were a little closer and the beats per inch decreased. Before doing so, though, we are asking the readers of COTTON to give us their opinions and advice regarding our present set-up.

We are running 1-inch Middling cotton making a 13½-ounce lap. Speeds and settings are as follows:

2-Blade breaker beater	1158 r.p.m.
2⅛-inch feed roll	15 r.p.m.
Feed roll to beater	$\frac{7}{16}$-inch
Beats per inch	23.13
2-Blade intermediate beater	1288 r.p.m.
2-inch feed roll	13 r.p.m.
Feed roll to beater	$\frac{7}{16}$-inch
Beats per inch	31.54
3-Blade carding finisher beater	965 r.p.m.
2-inch feed roll	13 r.p.m.
Feed roll to beater	¼-inch
Beats per inch	35.44

CONTRIBUTOR No. 6790.

"CONTRIBUTOR No. 6790" believes he will get better results in cleanliness and breaking strength if the settings are a little closer and the beats per inch reduced. It has been my experience that a closer setting of the feed roll to the beater will usually give some better cleaning but it will lower the breaking strength. The settings and speeds and beats per inch for the stock being run seem to be very good.

This man is probably beating his stock much less with his present lay-out than he was with the old machinery. This, of course, refers to total beats per inch by all of the beaters. For example, he is now beating the stock 23.13 + 31.54 + 35.44 = 90.11 total beats per inch. Compare this with the total beats per inch on the old machinery before the installation of one-process picking.

The stock is not being beat too much unless the first and second beaters are blade beaters of the old type, and we do not think this is so since one-process picking is now being used. I believe too much cleaning effect would be lost if the beats per inch were reduced very much more than they are at the present. Of course, if Carolina hand picked highland cotton or clean hand picked cotton from any section is being used, and if the class of goods being made are cleaner than necessary, it is perfectly safe to reduce the beats per inch 10 per cent or even more at each beater. To say it another way, the beats per inch could be reduced at each beater as much as the opening of the stock will allow. Try reducing them 10 per cent and then take samples of the stock as it leaves each beater and compare it with samples taken before the beats per inch were reduced. If the stock from the beaters after the beats per inch have been reduced is not lumpy, but fluffy and the fibers are well interlocked to make a solid sheet and the stock does not show any more shattered leaf and other foreign matter than before reducing the beats, then the beats per inch have not been reduced too much and further tests along the same line can be made. Breaking strength can be improved if cleaning is sacrificed and if the result does not leave the cotton in a dirtier condition than it can be used. I would not change the settings of the feed roll to the beaters until after thoroughly testing as suggested because a closer setting will certainly not improve the breaking strength, though it will give better cleaning.

Theoretically: Less beats per inch will increase the breaking strength and decrease cleaning. A closer setting will increase cleaning and decrease breaking strength.

Do not change all of the pickers at one time, but make the change on one picker, run these laps into certain cards, keep the sliver separate and run through drawing and fly frames and spinning frames, and make a test before letting the whole mill become influenced by the change. This may sound like a lot of trouble, but it is worth the trouble and the little extra expense because definite facts will have been established. Some of our ideas that we think best are not always so hot after all.

In making the test, the yarns for warp should go on through spooling and warping, then through the slasher into the looms. Carefully kept loom stoppage tests from these looms will tell the tale. Advice can be given, but the conditions may not be the same at this man's mill as at other mills, and the same settings will not always apply.

A suggestion for arranging samples from each of the beaters so that the quality of the work may be compared: Sandpaper a long board about 10 inches wide and paint it black or cover it with black oil cloth, place samples of stock about 8x10 inches on it and cover it with glass, leaving ample space on the board to insert other samples for comparison. Always keep the samples covered with paper or cloth so that light will not affect the color of the stock. Then a true history of the test will be on hand at all times.

Here are a few suggestions that "CONTRIBUTOR No. 6790" could try in his efforts to increase the breaking strength of his yarn: Let the overseer or superintendent check the card grinder's settings on a card just ground and being set. Do this until there are enough cards set alike to run one slubber. Then have the grinder change the traverse and cylinder grinder fillets just twice as often as he usually does. Be sure that the licker-in fillet is sharp and even and that the same gauge is kept at the licker-in all the way across. If the licker-in is not in first class shape, spend a little money to make it so.

Now, after the cards are set properly and ground right and have good clothing, back off the licker-in to feed plate setting about 5/1000-inch more than it has been set formerly. If it has been set at 10/1000-inch, back it off to 15/1000-inch. Put new trumpets in the card coiler heads and in the deliveries of drawing that this sliver from these cards will be run on. Trumpet gauges can be secured from machinery manufacturers, and they will recommend correct size trumpets.

Have good rolls in the fly frames and spinning frames to run the roving from the drawing and have the top roll stands gauged all the same. The settings

I use on spinning rolls is to have them set just close enough to run cockled yarn and then back them off just enough so that the cockled yarn will stop. Run the fly frame rolls just close enough so that lumpy roving will not be made. Make tests regularly to make certain that there is at least one per cent more moisture in the roving and spun yarn than there is in the raw stock cotton. When this yarn is ready for the slasher be sure that only a minimum of stretch is put in the yarn and that the yarn from the slasher contains at the very least, one per cent more moisture than is in the raw yarn, 2 per cent will be better. Instruct the slasher tender not to put his press roll on the loom beam warp until 100 to 150 yards of warp is wound on the beam—in other words, do not wind on the beam too tight, especially on the first 100 to 150 yards or even until the beam is one-third full.

When these warps are run on the looms, there will be less loom stoppage than on the other warps in the room. If there is not, get in touch with the writer through COTTON and he will make further suggestions.

From the foregoing, it will be seen that only a fraction of the mill has been set in a certain way to see if improvement can be made in the running of the stock. If the breaking strength has been increased, then other cards, drawing frames, spinning frames, etc., can be changed to conform to those settings showing the best results.

C. O. B.

Another Method of Figuring the Average Yarn Count

EDITOR COTTON:

This is in answer to CONTRIBUTOR NO. 4022, on the question of figuring the average counts of ply yarns. For the information of late arrivals, this question appears on page 100 of the January issue of COTTON. The problem is to find the average count of a 4-ply yarn, consisting of the following yarn numbers:

1 end of 20s.
1 end of 25s.
1 end of 40s.
1 end of 50s.

CONTRIBUTOR NO. 4022 contends that several of his classmates arrive at the average counts thusly:

1 end of 20s.
1 end of 25s.
1 end of 40s.
1 end of 50s.

4 135

$$\frac{135}{4} = 33.75\text{s average counts}$$

The foregoing formula is entirely wrong, and the fact that it comes quite close to the proper solution when the yarn numbers in the ply are nearly the same is merely a coincidence.

The method given in paragraph three by "CONTRIBUTOR NO. 4022", is correct, but before proceeding further with it, it might be well to ascertain where Mr. Yates gets his values, or constants.

To begin with, all the calculations pertaining to yarns are based on the following well-known values:

840 yards = 1 hank.
7000 grains = 1 pound.

Okay! Then 120 yards (the standard length of a skein of yarn) equals one-seventh of 840. 7000 grains divided by seven equals 1000. So, in all calculations, using a skein of 120 yards of yarn, the constant 1000 must always enter.

In the card room, it is customary to weigh 12 yards of roving . The constant dividend in this case is always 100. Thus:

$12 \div 840 = 1/70.$
$7000 \div 70 = 100$ constant dividend.

Although not generally used, I have a method of finding the average counts from the resultant counts. It is a very easy and simple way of arriving at the desired results.

As an example, we wish to find the average counts of:

1 end of 25s.
1 end of 40s.
1 end of 50s.

I arrive at the resultant counts as follows: Rule. Consider the largest number as a commond dividend, and divide this number by each of the counts of yarn plied. Then divide the sum of the quotients obtained into the common dividend. This gives the resultant counts.

$50 \div 25 = 2.00$
$50 \div 40 = 1.25$
$50 \div 50 = 1.00$

4.25

$50.00 \div 4.25 = 11.76$ resultant count.

Now, it is only necessary to multiply the resultant counts by the number of ends plied, and you get the average counts.

$11.76 \times 3 = 35.28$ average counts.

This line of reasoning is clear enough, when we consider the fact that the resultant counts simply means the weight of counts if the plied yarn were made from one single end, and average counts means the weight of each individual end, if all ends were of the same counts.

To prove the foregoing method is correct, we will work it out using the standard formula.

1 skein of 25s. $1000 \div 25 = 40$ grains.
1 skein of 40s. $1000 \div 40 = 25$ grains.
1 skein of 50s. $1000 \div 50 = 20$ grains.

Total 85 grains.

$85 \div 3 = 28.33$ average grains.
$1000 \div 28.33 = 35.28$ average counts.

I hope the above will be of aid to "CONTRIBUTOR NO. 4022", and his friends.

CONTRIBUTOR NO. 6800

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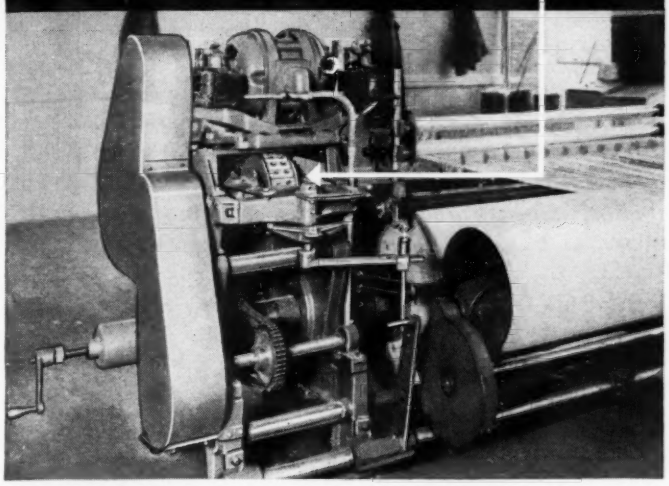

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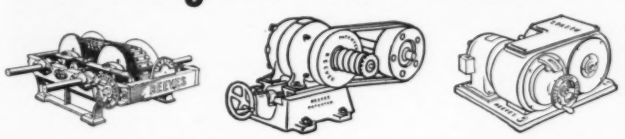

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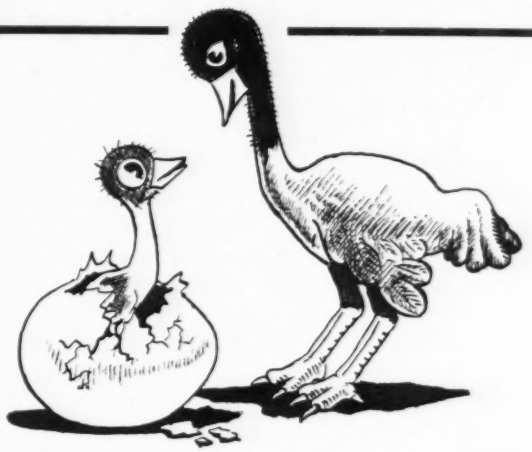

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Opinions on Proper Width of Card Feed Plate Face

A discussion that will make you think about a point often taken for granted . . . . . .

EDITOR COTTON:

In his question on page 95 of the December issue of COTTON, "CONTRIBUTOR NO. 6886" has requested information on the width face of card feed plates to use with cotton staples from 1-inch to 1 3/16-inch, saying that formerly only short staple was run at his plant, but he is now running 1-inch, 1 1/32-inch, and 1 1/16-inch, with the fibers often running as long as 1 3/16-inch. His card is set so that the distance from the bite of the feed roll to the lower edge of the feed plate is 1 inch. He understands the theory is that the distance from the bite of the feed roll to the lower edge of the feed plate, at which point the greatest pull is exerted on the cotton by the licker-in, should be 1/16-inch to ⅛-inch greater than the average staple being run.

This man did not state that he is experiencing any difficulty in running 1 3/16-inch staple cotton on a card with a feed plate with a 1-inch face, so I take for granted that it is a question of theory in regard to the width of face of feed plate to the staple of cotton being run.

The theory is, at least our textile books tell us, that the distance from the bite of the feed roll to the lower edge of the feed plate should be from 1/16-inch to ⅛-inch greater than the average staple of cotton being run.

As there is no adjustment or no other way to alter the width of the face of the feed plate, the only way to change the width of the face would be to have a new feed plate made. Personally, I have never seen an extra set of feed plates for cards in a mill, many of which run a wide range of staples of cotton. I have run cotton on the same type of card from 15/16-inch staple to 1⅛-inch staple without any change in the width of the face of the feed plate, the width of the face of the feed plate measuring 1⅛-inch.

One card manufacturer states in its machinery handbook that its "feed plates and lickers-in permit using all staples without changes". These feed plates have 1⅛-inch faces.

As I see it, the theory is, that if a staple longer than the width of the face of the feed plate is used the fiber will be held by the feed roll at the same time that the licker-in is exerting its greatest pull on the fiber at the bottom of the face of the feed plate and this would damage and break the fiber. However, in actual running, very few of the fibers come in a straight line from the feed roll down the face of the feed plate, the greater part of them curving or coming at an angle. I do not believe any appreciable amount of damage is done at this point because of the width of face of the feed plate.

CONTRIBUTOR NO. 6888

◆

EDITOR COTTON:

"CONTRIBUTOR NO. 6886", who has requested information on feed plates on cards, could tell no difference in the running of the 1 3/16-inch staple over the shorter staple by using the regular feed plate, for which standard is 1-inch thick. Once when I was running ⅞-inch and 1-inch cotton and changed to 1½-inch stock, I put a ¼-inch steel block under the feed plate and the longer cotton ran satisfactorily.

CONTRIBUTOR NO. 6889

An Old-Timer Says—

(Continued from page 102)

have been tried in court and are therefore bona fide information, although written along the experiences he had with you to make them readable.

And that article which he wrote on "The Thrill of Accomplishment" brought many requests for the study course, as I see here from a letter written to him in June 1933.

And here is a letter which shows how oftentimes many people at the same plant get results from some of the OLD-TIMER methods:

"In starting a thousand new looms I had occasion to make full use of those extra copies of OLD-TIMER articles ordered from you. They were given to second hands, loom fixers, card grinders and spinning section men. It did them worlds of good to read about the Teddy Roosevelt tenacity of OLD-TIMER. He really inspires strenuous endeavor in ambitious young mill men and gives the rest of us plenty to think about."

Let me repeat, JIM, that these quotations from actual letters are being given, not in any effort to boost OLD-TIMER, because I think most readers will agree that if his page can have a run of over 17 years, it is not necessary to make any effort to boost it, but the quotations from experiences which other readers have had which shows *they* have improved their jobs—have improved themselves personally—may inspire some of our present readers to realize that they too can profit in the same way if as OLD-TIMER says they have got the backbone to make the effort. But we can't go on quoting from these letters because there are far too many, although most everyone tells of some new experience in relation to an OLD-TIMER article.

Here is one from Manchester, N. H., another from the "Toyo Cotton Spinning Mills, Meiken, Japan", and another from Toronto, Canada—another from West Warwick, R. I., and so on. Although we have only gotten up to 1933 in the file of letters, we simply can't take up much more time but must pass on.

Okey, Mr. Editor, but you haven't mentioned what I think, and probably you do too, the most important series of articles OLD-TIMER *has ever written.*

Yes, JIM, I know what you have in mind and I have been trying to think how we could avoid getting into a long discourse if we got started talking about "The Story of OLD-TIMER'S Methods of Working and Management."

That's it, Mr. Editor, those are the articles I had in mind.

Really, JIM, even if those articles are written in

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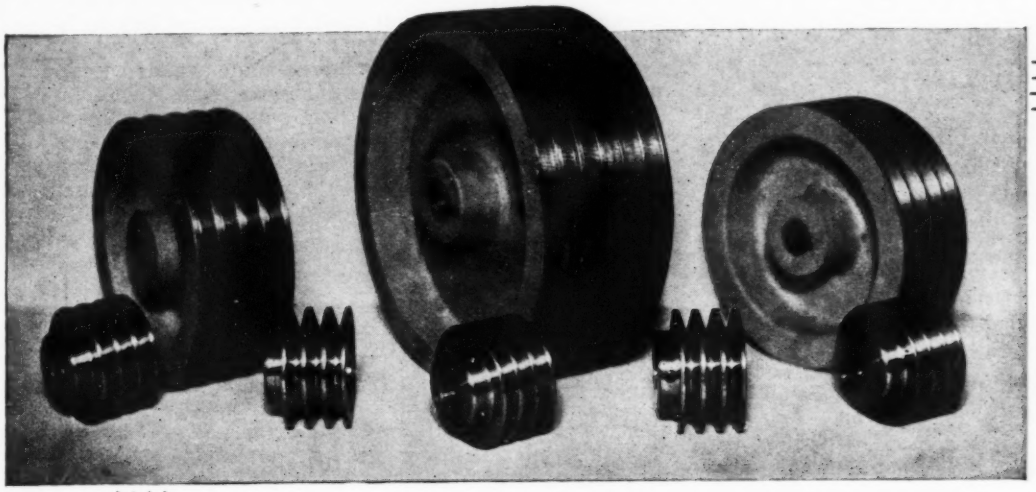

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conversational style, they comprise what might be termed a text-book. OLD-TIMER explained to me at the time he was preparing the work that he believed readers would show more interest and read it with more pleasure than if the material was prepared like the usual text-book. The thought is that the average reader feels he is putting forth an effort—that he is actually working—when he gets down to studying a text-book. While if he is reading an article in conversational style he does so without any effort and at the time he is absorbing the thoughts and methods brought out in the material, he is enjoying the pastime too—that is simply one of the freaks of human nature and partly explains some of OLD-TIMER'S ways of trying to hold the interest of his readers. You see, JIM, to quote one of OLD-TIMER'S axioms, "There seems to be no substitute for constant work and study." Therefore, those of us who follow his philosophy are ever getting new thoughts for doing the things which it seemed to us had reached perfection. Or at least they are so simple that we had no idea there was a better way, a more convenient way or a less expensive way to do that particular kind of job. And that thought brings up another of his pet axioms which says that "The final stage of improvement is never reached in any business, in any machine, or in any individual." Practically all of the writing he has ever done will come under that general head—he simply can't stay from that thought, and although he goes at us from all angles and in every conceivable way he can think of—that one thought—"The final stage of improvement is never reached"—is behind every article he shoots at us.

Take for example that series we just referred to: "The Story of OLD-TIMER'S Methods of Working and Management".

Listen!

What is it, JIM?

The speed of my machinery is going down. Must be something wrong at the power plant. I'll have to run, Mr. Editor. So long, and thanks for coming to see me.

So long, JIM. Hope to see you again soon.

"Nine Old Textile Men" Discuss Spinning Problems

(Continued from page 74)

buffing is required.

3. On numbers of 6s and 8s it is necessary to re-buff Koroseal rolls every six months.

9. Running low numbers we have found it necessary to re-buff Koroseal rolls about every 10 months.

Settings on Casablancas Long Draft Spinning Rolls for 15/16-Inch Cotton.—2. Back to middle 1⅞-inches; middle to front 1⅝-inches.

5. Warp and filling at our plant: front to back 3½-inches; front to middle 1⅝-inches; middle to back 1⅞-inches.

6. Set 1/32-inch to belt.

8. Top roller setting should be 1 11/16-inch from center to center. Steel roller setting 1 15/16-inch from center to center.

9. Front to middle 1 21/32-inch; middle to back 1 28/32-inch.

Eliminating Eyebrows without Revolving Clearers.—1. Revolving clearers are the only salvation.

2. Eyebrows can be decreased considerably by the use of cork rolls in the front line. Eyebrows may be decreased on Koroseal by roughening the surface of roll with very fine sandpaper.

8. We find by using cork roll covering we are able to eliminate eyebrows. Also, there are one or two types of treated leather that will eliminate eyebrows.

9. Eyebrows can be eliminated without revolving clearers by attaching a small leather tongue on the clearer over the top front roll and by this method the eyebrow is pushed back.

Change Break Draft when Running Spun Rayon.—6. Increase the break draft as compared with cotton break draft.

9. If in changing from cotton to spun rayon the staple lengths coincide, the break draft should not be changed.

Allowable Percentage Variation in Spindle Speeds, Band and Tape Driven at 4,000 and 8,000 R.P.M.—3. Band drive 6 per cent; tape drive 3 per cent.

8. Band driven spindles should not vary over two per cent. Tape driven spindles should not vary over one per cent.

9. Band driven 5 per cent; tape driven three per cent.

Experience with Home-Made Wooden Tape Idler Pulley Bearings.—1. As home-made blocks are not as good as those made by the manufacturer and the price is only a few cents each, it seems like false economy to attempt a saving here. All our blocks are cleaned one time per year, along with a thorough inspection and adjustment of the entire idler. Also, when a new tape is sewed on the tape man cleans the idler blocks of that tape.

3. Home-made wooden bearings are no good.

5. We tried home-made bearings but did not get good results. They seem to wear out journals and stick. We later found that oil should be put in under pressure. We clean well each time a tape has to be sewed on.

8. No experience with home-made wooden bearings. We clean our blocks about once a year.

9. No experience with home-made wooden bearings. Does not seem practical as a simple method could not be devised to make the oil penetrate through the wood. Our wooden bearings are cleaned thoroughly once a year.

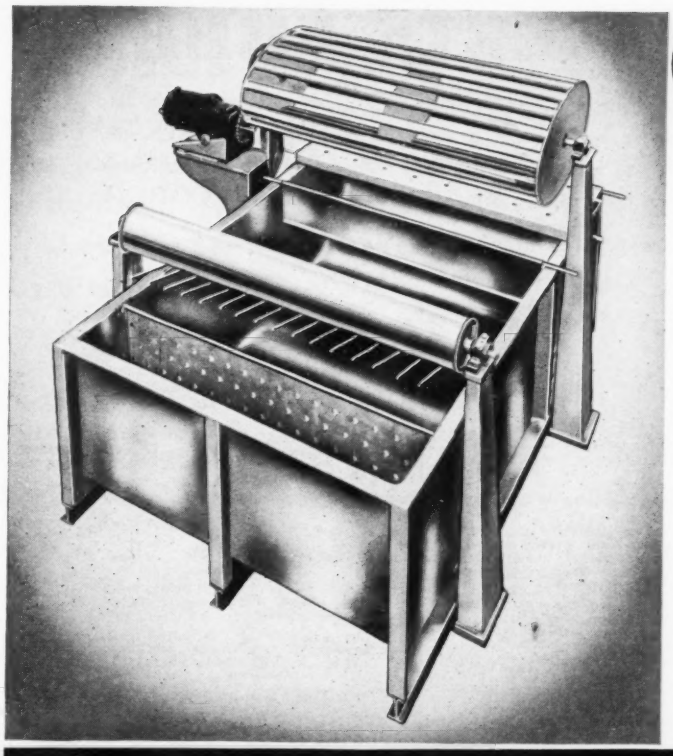
Lay on Filling Bobbin.—1. On our 10s filling we have a traverse of 1⅞-inch with 54 coils being wound on during the upward stroke of the rail and 27 coils on the downward stroke. The lay per inch is 28.8 going up and 14.4 coming down. With many more layers per inch we find the yarn has a tendency to make coils that overlap and this results in sloughing-off. On the other hand if less turns per inch are used there is a loss because less yarn is put on each full quill. By using a 3-point cam and making the fast stroke down, we run with a minimum of time spent on the small part of the bobbin at the top of the traverse.

3. The traverse should go down fast and up slow for best results.

6. No standard on soft medium twist; governed by type quill, cotton, and speed.

8. We run our ringrails down fast and up slow. We find this is better for our type work, loom speed, etc.

Ring Size to Spin 8s to 14s on ⅞-Inch Middling Georgia Cotton.—2. It is practical to spin 8s, 12s, and 14s with 2¼-inch ring, 8½-inch traverse on a 3½-inch gauge frame. 8s may be spun from .84 hank single roving on long draft spinning. 12s and 14s should be made from 1.00 hank single roving. The yarns are just as good as those made on smaller rings.



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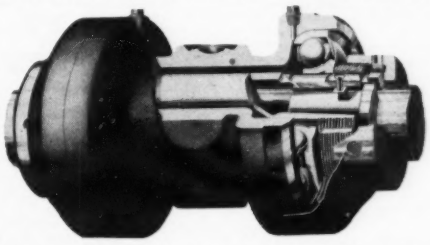

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213. Saco-Lowell Cotton Machinery—Twisting—a 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

217. Diamond Fibre Hollow Ware—32 page booklet and catalog, attractively illustrated, showing various types of boxes, trucks, cans, barrels, baskets and trays of Diamond Fibre Hollow Ware. Of interest to every mill man in solving material handling problems. Free on request. Continental-Diamond Fibre Co., Dept. C, Wilmington, Delaware.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

224. "Tank Talk"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. R. D. Cole Manufacturing Company, Newnan, Georgia.

228. Solutions for Your Problems—20-page illustrated booklet containing valuable information on the scouring and processing of wool and other fibres. Detergent Products Corp., Atlanta, Ga.

233. Catalog No. 22—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

234. They Stay Brighter Longer—This interesting illustrated booklet containing facts about Mazda lamps will be sent you free on request. General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio.

238. Glorified Light—A 32-page book illustrative of the vital part proper painting plays in scientific lighting and in the reduction of maintenance and production costs. Pittsburgh Plate Glass Co., Pittsburgh, Pa.

240. The New Proctor Automatic Yarn Dryer—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector. Proctor & Schwartz, Inc., Philadelphia, Pa.

253. Brown Air-O-Line Controllers—This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

259. Cotton Conditioning with Texspray Compound—18-page booklet describing the Texspray method of cotton conditioning. It has been proven that this method will save money, increase production, increase flexibility of fiber, eliminate static and reduce fly and dust. The Texas Company, New York, N. Y.

260. Lubrication—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the function of spindle oils. The Texas Company, New York, N. Y.

261. The Brown Moist-O-Graph—16 page booklet describing the Brown Moist-O-Graph which measures, records and controls the moisture content of cotton warp yarns. The Brown Instrument Company, Philadelphia, Pa

263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N. C.

268. Factoring and Financing—Illustrated booklet which outlines the functions of factoring in the textile industry. Textile Banking Company, New York, New York.

269. Stainless Steel Equipment for the Dyeing and Textile Industry—Attractive four-page folder describing the Blickman line of dyeing equipment. S. Blickman, Inc., Weehawken, N. J.

271. The New American Adjustable Diameter Wedgebelt Pulleys—illustrated leaflet describing the American adjustable diameter sheaves designed to produce the best performance in all types of V-belt driven textile machinery. American Pulley Co., Philadelphia, Pa.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

277. Bulldog Rubber Tension Roll Covering—attractive four-page folder describing the new scientifically correct product designed for taking off all synthetic fabrics, natural silks and fine cotton goods. Boston Woven Hose & Rubber Company, Cambridge, Mass.

278. Textile Testing Laboratories—a 10-page illustrated booklet describing a modern textile testing laboratory and pointing out the necessity for laboratory air conditioning systems. Ask for bulletin 136. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

279. When Cleaning's Automatic, a Spinner's Free to Spin—a 10-page illustrated booklet dealing with the Parks automatic traveling cleaner. Ask for bulletin 1036. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Morton Machine Works, Columbus, Georgia.

286. Tricon W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and V-belt drives. American Pulley Co., Philadelphia, Va.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, Newark, New Jersey.

291. Wolf Products for the Textile Trade—Illustrated booklet describing the Wolf line of chemicals for the printing, dyeing, sizing and finishing of all textile fabrics. Jacques Wolf & Co., Passaic, N. J.

293. Mind Your P's and Q's—Attractive folder describing and illustrating the brands, properties and uses of silicates of soda. Philadelphia Quartz Company, Philadelphia, Pa.

294. From a Locomotive to a Pig—Attractive ten-page booklet describing the advantages of Metso as an ideal cleaner in the textile industry. Philadelphia Quartz Company, Philadelphia, Pa.

295. Fence Facts—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence. Page Fence Association, Bridgeport, Conn.

296. Full Fashioned Hosiery Manufacture—Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery. Gulf Oil Corporation, Pittsburgh, Pa.

297. Lunkenheimer List Price Schedule R-I—new 44 page catalog covering the entire line of valves, boiler mountings and lubricating devices manufactured by the Lunkenheimer Company. The Lunkenheimer Company, Cincinnati, Ohio.

299. The New International Time Recorder—Information on the new automatic time recorder which gives complete wage and hour records. International Business Machines Corp., New York, N. Y.

301. Norma-Hoffmann Bearings Catalog—Norma-Hoffmann Bearings Corp., Stamford, Conn.

303. The New Boyce Rayon Knotter—This new knotter increases production, eliminates perspiration and chemical stains and makes clean, uniform knots Over 2,000 of these knotters are now in use. A. B Carter, Inc., Gastonia, N. C.

305. Tannate Belting—leaflet describing Rhoads Tannate leather belts and their uses and advantages in textile mill operation. J. E. Rhoads & Sons Philadelphia, Pa.

306. Waterproof with Sco-Co—information on the advantages of using Sco-Co industrial finishes and paints in the textile industry. Southport Paint Co., Inc., Savannah, Ga.

307. Lane Canvas Baskets—16 page illustrated booklet describing the Lane line of canvas baskets for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

308. Finnell Scrubbers—illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines. Finnell System, Inc., Elkhart, Ind.

310. Replacement Parts for Knitting Machines—attractive illustrated folder describing the Thomas & Skinner line of replacement parts for all types of knitting machines. Thomas & Skinner Steel Products Co., Indianapolis, Ind.

311. The Romance of Prairie Gold—attractive illustrated book which tells the story of corn and the uses of corn products in industry. Corn Products Sales Co., New York, N. Y.

312. Cork—The Modern Roll Covering—attractive booklet outlining the uses and advantages of cork for textile roll covering. Armstrong Cork Products Co., Industrial Division, Textile Products Section, Lancaster, Pa.

313. Detergent Wall Card—valuable and handy wall card listing pH strengths in both acid and alkali solutions. Chemists and dyers will find this chart invaluable in their everyday work. Detergent Products Corp., Atlanta, Ga.

314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

315. How Handling Problems Have Been Solved—a 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes. American MonoRail Company, 13106 Athens Ave., Cleveland, Ohio.

316. Ditto Payroll Record System—this special book has shown hundreds of textile men how to speed and simplify payroll routines. It shows how to save. Ditto, Inc., Chicago, Ill.

317. Circular Knitting Machines—a fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex. Sent, free on request to Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, Pa.

318. It's the Film—attractive folder describing and giving specifications for Lubriplate, the lubricant possessing features not found in conventional lubricants. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

319. Lubriplate—the modern textile machinery lubricant—attractive illustrated folder giving recommendations for textile machinery lubrication. Lubriplate is the new lubricant which forms a film on shafts, bearings, gear teeth, etc., which prevents wear, corrosion and contamination due to products of wear. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

320. The Control of Friction—four-page folder which shows why Lubriplate controls friction on textile machinery. Lubriplate Division, Fiske Bros. Refining Co., Newark, N. J.

321. Wooden Tanks for Many Purposes—attractive catalog containing much helpful data relative to general design and construction of wooden tanks for textile use. Also contains an interesting tabulation of experiments with different woods available for tank purposes. Hauser-Stander Tank Co., Cincinnati, Ohio.

322. The Application of Soaps and Soap Products to Textile Processing—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. Colgate-Palmolive-Peet Company, 105 Hudson St., Jersey City, N. J.

323. Textile Processing with Artic Syntex A and T—50-page illustrated booklet describing the properties of these new materials and giving tentative or suggested formulas for a number of applications in textile processing. Colgate-Palmolive-Peet Co., Jersey City, New Jersey.

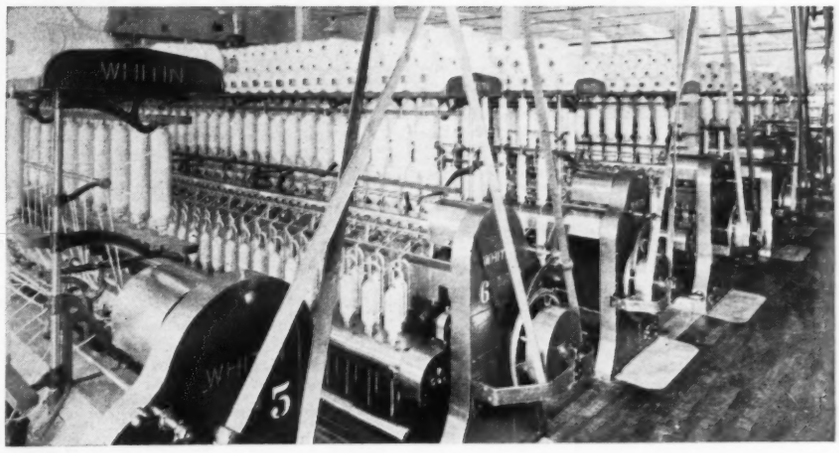
325. Protection for Your Humidifier Motors—literature describing the Walker fusedron which completely eliminates rewinding your humidifier motors. Walker Electrical Co., Atlanta, Ga.

326. A Payroll Method that is Saving Time and Money for a prominent Textile Mill—Illustrated folder complete with actual records describing the Ditto payroll method installed for a prominent textile mill. Ditto, Inc., Chicago, Ill.

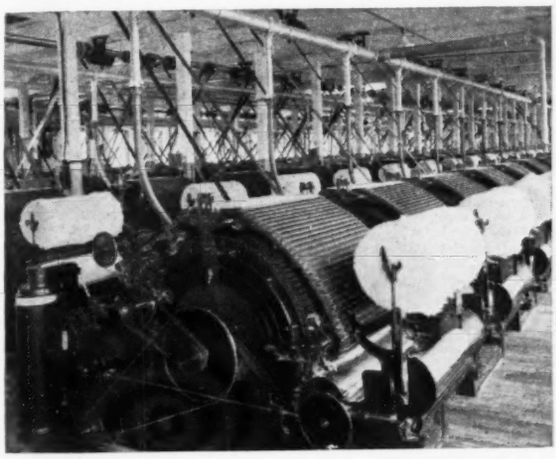
CONTINUED ON PAGE 116

Rhoads Belting

widely used in the modernization of this long established cotton mill . . . . on roving frames, slubber frames and in card room.



PHOTOS COURTESY TEXTILE AGE



This Mill surveyed the field, drew on their own lengthy experience plus the wealth of comparative data available—and then chose Rhoads Leather Belting.

Comparing relative grip, flexibility, capacity and endurance—you'll find your careful investigation will confirm their decision. Comparing values, point-by-point, dollar-by-dollar—you'll find Rhoads TANNATE a wise choice for new installations and for re-belting drives now in use.

May we show you how and why? Just write a note on your letterhead to—

J. E. RHOADS & SONS

Makers of Rhoads Tannate Belting & Mechanical Leathers

35 N. SIXTH ST., PHILADELPHIA, PA.

NEW YORK CHICAGO ATLANTA CLEVELAND

Factory and Tannery, Wilmington, Delaware

We eliminated the "re"—

YOU are familiar with the old stuffing box story—the packing and re-packing — the **re-re**-oiling, the **re-re**-adjustment — the **re-re**-placing. Are you familiar with the new picture — the method of admitting steam to dry cans, slashers and calenders that eliminates all this?

The Johnson Rotary Pressure Joint is packless — self-lubricating — self-adjusting — self-aligning. If it served only as a means of admitting steam to revolving rolls it would represent one of the best investments you could make from the standpoint of saving time and power, and cutting maintenance costs.

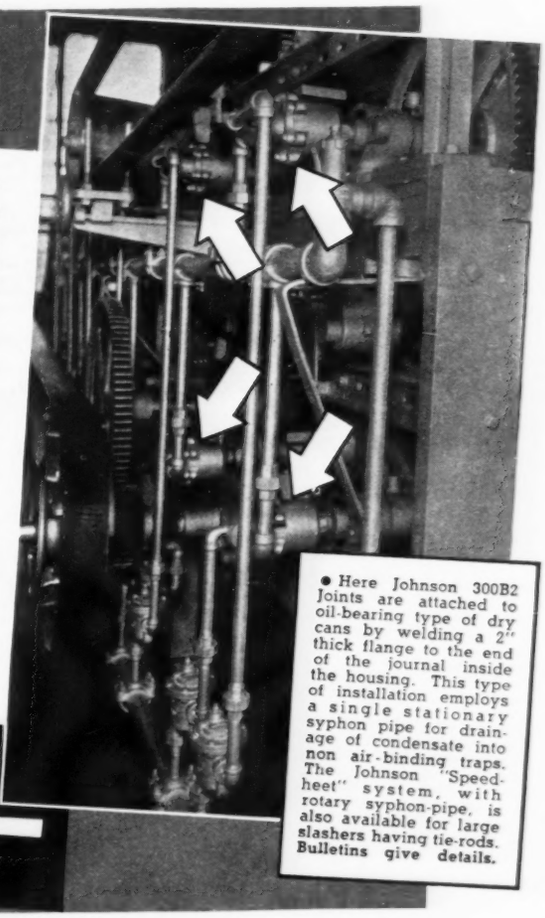
In its present development, however, it is more than a means of admitting steam to cylinders; it is also part of a modern method of removing condensate, air and gas through the same Joint that admits the steam. With this method there is no waiting for rolls to heat. Rolls are hotter — *stay* hotter. Scores of mills report a resulting production increase of as much as 25%.

Write for bulletins covering the latest developments.

THE JOHNSON CORPORATION, 815 Wood St., Three Rivers, Mich.

Johnson

Rotary PRESSURE JOINT



● Here Johnson 300B2 Joints are attached to oil-bearing type of dry cans by welding a 2" thick flange to the end of the journal inside the housing. This type of installation employs a single stationary syphon pipe for drainage of condensate into non air-binding traps. The Johnson "Speedheet" system, with rotary syphon-pipe, is also available for large slashers having tie-rods. Bulletins give details.

HELPFUL BOOKLETS FREE...

Continued from Page 114

327. Sanforizing Machinery—illustrated booklet describing the sanforizing machinery offered by the Textile Finishing Machinery Co., Providence, R. I.

328. SKF Ball and Roller Bearing Transmission Appliances—84 pages, 100 illustrations, descriptions and dimensions of universal, unit, split and roller bearing pillow blocks, ball bearing drop and post hangers, take-up boxes. Suggestions and dimensional and load data for bearings also given. SKF Industries, Inc., Philadelphia, Pa.

329. SKF Engineering Data Sheets—84 page illustrated catalog giving both inch and metric dimensions of more than 3000 SKF ball and roller bearing types and sizes; conversion tables, installation and maintenance helps. SKF Industries, Inc., Philadelphia, Pa.

330. Tools for the Textile Trade—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-On Tools Corporation, Kenosha, Wisc.

331. Unbrako Self-Locking Hollow Set Screw—Bulletin Form 532 includes illustrations and descriptive matter of this latest improvement in socket set screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

332. Hard Maple Flooring—an 8½ x 11-inch folder featuring a close-up of Northern Hard Maple Flooring and specimen pieces to show grades, prepared for the convenience of architects, builders and others when considering flooring grade requirements. Maple Flooring Mfrs. Assn., 332 South Michigan Ave., Chicago, Ill.

333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, Calif.

336. Consistency Changes in Starch Pastes—A new and improved consistometer and technic for the study of the pasting phenomena of starches. Charts give the consistency record of pastes of tapioca flour, corn, potato and wheat starches. Stein, Hall & Co., Inc., New York City.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

339. Diehl Textile Motors—a 12-page booklet illustrating various types of installations on textile machinery and equipment and describing the different types of Diehl Motors, as well as Diehl Grinders and Fans. Address Textile Dept., P. N. Thorpe & Co., 267- 5th Ave., New York City.

340. Notes on Cotton Warp Sizing—a 45-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

341. Chapman Transmission Equipment — Catalog No. 37 describing and illustrating the complete line of Chapman hangers, hanger boxes, pillow blocks, ball bearings and other transmission equipment. Chapman Transmission Corp., Buffalo, N. Y.

342. Human Beings at Work Consume Energy Constantly—Attractive illustrated booklet describing the new Ideal food and drink conveyor and outlining the advantages of its use in the modern textile plant. Swartzbaugh Manufacturing Co., Toledo, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full-fashioned knitting.)

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

65. Bulletin No. 500. Cooper-Hewitt Industrial Illumination—booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Electric Vapor Lamp Co., Hoboken, N. J.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., 1934 Dana St., Cincinnati, Ohio.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

152. Plant Check-up List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the June 1939 issue of COTTON.

(*Fill in here numbers you select from both page*) .....

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Name .....

Firm name ..... Position .....

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List Items You Want and Tear Out and Mail Coupon Now!

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Please be sure to fill in your Firm's Name and your Position on the Coupon. This service cannot be extended to you unless this information is furnished.

Specify STANDARD *Durene for*

COOL . . . . .

CLEAN . . . .

COMFORTABLE

"The service records of our employees have made possible the Standard-Coosa-Thatcher Co."
ALBERT G. THATCHER
1846-1928

Shirts, Shorts and Sox

Identify them with Durene tags and your Men's Trade will quickly recognize and welcome the extra wear, the extra absorption and evaporation features Standard Durene yarn gives your garments. Ask the Standard salesman to prove how our 62 years' spinning experience and single control processing make Standard Durene garments go over the counter faster.

STANDARD *Durene*
COMBED SAKS
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PREEMO
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STANDARD-COOSA-THATCHER CO.
CHATTANOOGA, TENNESSEE
Sales Office: 806-8-10 Lafayette Building, Philadelphia, Pa.

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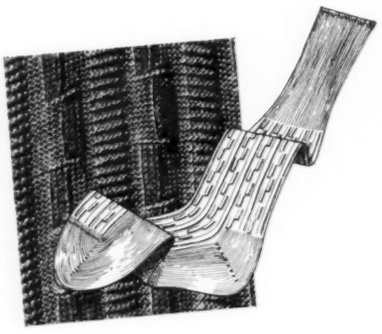
C. F. Smith	M. A. Henderson	N. P. Murphy	Wm. M. Hall
180 Madison Ave.	940 Merchandise Mart	Guilford Bldg.	Reading 6262

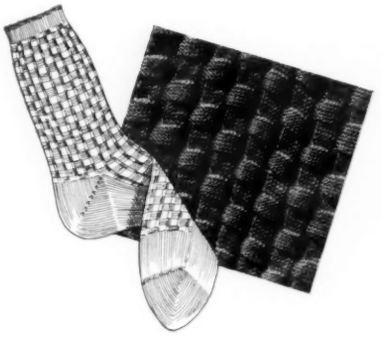
KNIT·KNACKS

Anyone convinced that this isn't a changing world should keep his eye on the market for men's hosiery. It's a tradition, we hardly need to say, that styles in this stronghold of conservatism remain pretty well stabilized. But that doesn't mean that men don't know a good *new* thing when they see it, and that they won't buy a new kind of hose if it comes in patterns and color combinations that appeal to their innate sense of the fitness of things.



NEW TREND IN MEN'S HOSE

So now, there's a new style in men's hose that has all the earmarks of an up-and-coming success. We refer to the Links-and-Links patterns which are now being made in America on American-made machines. Heretofore imported only from abroad, and too high in price to reach a wide distribution, this hosiery is now made by several manufacturers in this country, and is being retailed from 50c up by several leading stores with remarkably successful results.

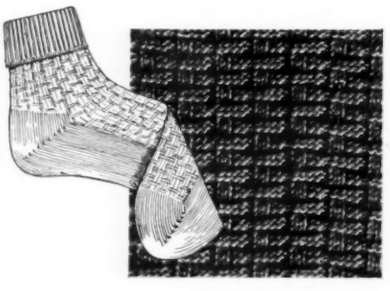


WHAT RETAILERS SAY

Investigation at shops and stores in New York reveals a universal interest in the new Links-and-Links hosiery—and whole-hearted enthusiasm for the way it is selling. Said one buyer for a Fifth Avenue store, "I believe that this type of thing made by American manufacturers has tremendous possibilities." Said another, "The basket weave sock is selling splendidly. It is one of our fastest moving items." Most popular among the designs were the basket weave and wicker weave—the neat, well defined, "tailored" type designs.

FOR THE WOMEN AND CHILDREN, TOO

Links-and-Links patterns in women's and children's sports socks and anklets are finding an equally favorable market reaction. Buyers report that they are fast-selling items with an excellent future. As one department store buyer of women's hosiery put it, "The reaction to our Links-and-Links sports line has been most favorable. The socks are selling. We believe we can do a lot with this type of merchandise. A very considerable part of our stock is based on this idea."



TAILORED DESIGNS PREFERRED

The general opinion is that the success of this merchandise depends to a great extent on the choice of patterns and yarns in which it is produced. The neat, well-defined "tailored" type designs, as opposed to the "confused" designs, are those which are proving to be most popular.

THE S & W KOMET-LINKS-AND-LINKS MACHINE

There is only one machine made in this country which produces all the various Links-and-Links patterns — the Scott & Williams Komet 4″ diameter, 132 and 168 needle Links-and-Links Machine, with double feed, draw thread, tipped heel and toe and five color stripe attachments—and 3½″ diameter 200 needle. With this machine you can produce an endless variety of Links-and-Links designs in combination with double feed and plating, including 3-color work. It gives any combination of ribs, and different combinations in different portions—ribbed to the toe or top. It is adaptable for men's half hose, men's slacks (with or without self-supporting tops), crew socks in as many as five colors for stripes, anklets for women and children, boys' ⅝″ hose with Links-and-Links patterns or broad rib with turned-down striped cuffs. This S & W machine is one of the most versatile of all machines. It is adaptable to many uses; it knits successfully any type of hosiery yarn, and it has a wide range of yarn sizes within the gauge. Why not use it to obtain the business offered by the growing popularity of the Links-and-Links designs? Scott & Williams will be glad to give you further information about this fast producing, efficient machine and the many possibilities it offers for creating new profits for your mill.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

Futility of Adjustments

By Erskine Root

RECENTLY, our seaming and looper fixer came to us with the complaint that he was having difficulty with crooked stockings and requested we look into the matter. As he departed we could not help but think "What Next?" But nevertheless we delved into the matter immediately and found there was some justification for his complaint though not as exaggerated as some of his seamers would have him believe.

A campaign was started against these offending heads and for two weeks we did all in our power to remedy the condition once and for all. We straightened heads until it was boresome to even look at a jack-head bolt and when we were finished we asked how the work was coming through. To our amazement the answer was that it was a little better but there were still too many crooked stockings. This was food for thought so we decided to keep a record of several machines and try to get to the bottom of the trouble, and though the record brought us light it is still a perplexing situation and we wonder if the same condition might exist in other mills.

MACHINE No. 61

HEAD No.	LEFT SIDE LONG	LEFT SIDE TIGHT	RIGHT SIDE LONG	RIGHT SIDE TIGHT	LONG	SHORT	GENERAL LENGTH
1					Jan. 2 Jan. 17	Jan. 6	Good
2					Jan. 19	Jan. 25	
3							
4	Jan. 16	Jan. 20					
5			Jan. 13				
6			Jan. 6	Jan. 3			
7						Jan. 26	
8					Jan. 10	Jan. 12	
9							
10						Jan. 11	
11							
12	Jan. 9	Jan. 12					

The accompanying chart is a record of all the adjustments made on the first twelve heads on machine sixty-one during the month of January. On the second, it will be noticed that head number one was running long. The adjustment was made on the slur-cock and on the sixth it had to be set back and then readjusted on the seventeenth. On down the long and short columns the rest is self explanatory, showing the futility of adjustments.

Now we come to the crooked heads. January third head number six ran tight on the right side. The adjustment was made and it lasted exactly three days because on the sixth it was just the opposite. On the thirteenth head number five was running long on the right side and out of all the adjustments made during the month this was the only one that stayed put. Heads number four and twelve reversed themselves after a few days also.

It is not our intention to imply that adjustments are useless or not ethical but we sometimes wonder if it is not more advisable to let a crooked head run for a day or so before any attempt is made to regulate the condition on the machine. We have found that when the sinkers are oiled there is an enormous amount of uneven heads due to the fact there is freer movement of the parts, said condition regulating itself as the fabric absorbs the oil after several sets. No matter how careful we are in endeavoring to keep a minimum of water and gum from getting down into the sinker and jack-heads, a certain amount of each finds its way down there and this is no doubt the beginning of the trouble, or least to our way of thinking. It is not reasonable the fine spray, which is caused by the yarn as it is drawn to the needles, does not deposit an equal amount of sediment over the entire length of the sinker and jackheads? In other words, it is quite possible for one side of the heads to contain more gum and dirt, which brings us back to the realization that this particular head will probably run crooked.

We have also noticed that on rebuilt machines, where there is practically no foreign matter in the heads to hamper true operation we have not experienced so much trouble with crooked stockings. On these machines we first inform the operator to switch the cones of silk when a head is not running evenly and in many cases the trouble is eliminated immediately. On the machines which have been operating several years and the heads are sticky with gum we first insert needle oil and if that does not better the

condition the yarn is changed. An adjustment is only made after these two simple remedies have been tried and then only after the head has run crooked for two days. Of course, there are times when it is necessary to make an adjustment at once because the condition is so aggravated. One can tell this quickly by either the amount of "play" in the sinkers or the setting of the verge plate. As a rule though, it is rarely that something like this is encountered, and we have found that even in cases of this sort simple remedies overcome the fault.

This writer has observed hundreds of machines in operation in many plants, including newly installed equipment and has yet to see a machine that produces a full set of perfectly straight stockings. The machine itself may be in perfect alignment but there are too many other elements which enter into the subject that have a tendency to produce a crooked stocking.

Some years ago a plant by whom we were employed installed a very fine type of machine and as strange as it may seem, or incredulous for that matter, after the machine had been operating for about three months the four heads over and near the shogging cam ran crooked until the two legs on either side of the shogging cam were bolted to the floor. This condition on this machine may never exist again in this particular type and though the method of eliminating the trouble may seem unorthodox it turned the trick and that is all that is essential regardless of what the trouble may be. The cam shaft brake was in perfect working order and the machine was level, but the two legs which were eventually bolted to the floor had a tendency to rise slightly every time the machine narrowed and this vibration was the cause of the trouble.

In closing, let it be said that we believe one can adjust heads "till the cows come home", and we shall still have a certain amount of crooked stockings; how about it, you fixers?

The Dyehouse of Tomorrow

IN NEARLY HALF A CENTURY OF EMPLOYMENT in dyehouses all over this country and in half a dozen dyehouses in Europe never yet did I meet a textile man who would own up to what he really knew about the dyeing part of the business. Naturally I was gratified to read in the March 1938 issue of COTTON a contribution from a broadminded executive who freely admitted that "there are few managers or superintendents who know the first letter about running a dyehouse, and as a result the dyer gets little consideration in his numerous problems." The contributor numbering himself among those who know practically nothing about chemicals and the technical end of the dyehouse, makes me feel justified in offering some comments to his contribution.

To use a common slang, "CONTRIBUTOR NO. 6777" certainly said a mouthful! But times are changing and, quite evidently, for the better because there are today more educated dyers, and technically trained men in the business to bring about the changes advised by this contributor.

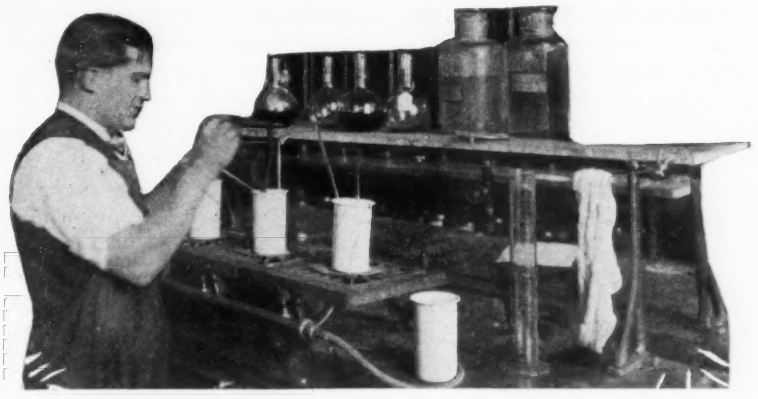
The Hourly Rate of Paying Helpers

Since he averred he knows nothing about the dyeing part of the business my comments on what he wrote will be in addition some advices, the result of a lifetime spent in dyehouses. Being an experienced old timer I hope my remarks will be taken in the spirit in which they are written, in good faith and for the benefit of that contributor and the numerous readers of COTTON.

In my opinion the hourly rate of paying helpers is not so far wrong as this contributor believes. While it is true that the quicker a run of goods is dyed and taken out of the machine the stronger and better the goods will be, the helper who works on the batch has hardly any control about the time it takes to process it. True, he can accelerate the starting and finishing, or he can loaf on the job and prolong those operations, but only for a matter of minutes. Over the actual time it takes to dye a lot the best and most willing helper can not gain a minute over a slower one, that being up to the dyer himself. If he is an able, experienced dyer he can provide for his dyeing exact formulas with which to perform within a certain time limit and, except in case of accidents, be reasonably sure to have a number of runs out of each machine every day in a specified number of hours. But I have known dyers who kept a batch of goods running in a machine or in a vat for hours, and even days, adding dyes and stripping color down, endeavoring to get a presentable match. In cases like these the helper could certainly not be accused of stretching the time to pad his pay-check.

On the other end I have seen helpers ruin perfectly good work by rushing it in order "not to get stuck a few minutes later, after the whistle blew." I have in mind one of my men who caused me a lot of trouble, by his endeavors to finish his work ahead of the rest of the crew. He was a fast worker, and I had him well trained for advancement, but I could not cure him of unnecessary hurry. An epidemic of spots developed one time which I traced to this man's work, so I started a vigil of watchfulness.

At the end of each day, and sometimes oftener, every man had to clean out his machine thoroughly. Since the flimsy hosiery predominated and fashion demanded a dull finish, water-proofed finish, and an increased amount of finishing pastes, at the end of the runs if the machine were not cleaned there was always the danger of getting spot in the subsequent run. This is the way my men were instructed to clean the machines: The machine was filled one third of its capacity with hot water and a little of a special scourer



"Every dyeing plant should have a laboratory . . . "

was added. Then the solution was boiled and the suds which formed allowed to run over the top for a few minutes and the steam turned off to allow the man to brush around the corners and into the gear and remove all the accumulated dirt. The steam was then turned on again to flush the bath over the top as much as possible, and instead of dropping it at the end, hot water was put in to flood it over. The whole procedure only took 10 minutes, but results were worth the time.

This fast worker conceived the idea of pairing down on that time and when I caught him this is how he did it: After the machine was brushed with the broom, instead of flushing the dirt over the top he dropped the bath, causing all the undissolved particles of grease and dirt to gather around the sides of the machine and to stick to the hot metal. Rinsing did not dislodge them, but clung unseen to the vat, being removed by the next hot dyeing bath of the following run and scattering all over the lot. The batch would be found full of nigger-heads and spots of all kinds. When this man was made to understand the error of his way that epidemic of spots stopped and so did our worries for the time being.

There are methods by which a bonus can be paid to worthy helpers, to increase their efficiency as dyehouse workers, but I do not believe they can be paid by piece-work rates like the knitters, loopers, boarders or any who depend on their dexterity to increase the pay in their envelope. At least not as the dyer does his work today.

Some Really Needed Changes

The dyehouse can surely be made a better place in which to work than it is at present, and a lot can be done to improve conditions in many plants I have seen and worked in. The nine points advanced by "CONTRIBUTOR NO. 6777" would go a long way toward the desired goal, but there are many more things which could be changed to advantage. Here are a few that come to my mind:

Water Distributing System. All reservoirs and pipes leading to the dyehouse that are of iron should be discarded and replaced by brass, copper, stainless steel, or Monel metal.

In many dyehouses the iron pipes of our great-granddaddies are still very much in evidence. The improved galvanized iron water lines did not prove to be lasting because the galvanization soon wore out and pipes became rusty inside. Every dyer knows what rusty water will do to his dyeing. Any of the foregoing metals named cost more to install, but will last much longer than iron will and much trouble can be eliminated. The modern stainless steel or metal alloys may yet find thier place where iron is now used in the dyehouse.

A Laboratory in Every Dye Plant. Every dyeing plant should have a laboratory in charge of the dyer himself or a capable man.

With a laboratory on the premises all dyes, chemicals, oils, and everything the dyehouse and the mill use can be tested for value, purity and quality before being accepted. Here all samples for new shades can be developed and formulas created and changed without loss of time; analysis of new product and changes in processing may be done on the premises.

Proper Ventilation and Fog-Free Dyeing Room. For the safety of workers and the protection of goods in processing the dyehouse should be well ventilated and the proper temperature maintained in winter as well as in the summer. Fog should not be allowed to accumulate in the dyeing room, as it is seen in many dyehouses at present during cold weather and on rainy days.

In "Take Care of the Pennies" by "CONTRIBUTOR NO. 6610", which is published in the same number of COTTON on page 119, I read with interest under heading: "Unit Heaters in Dyehouses", where he touched a very sorry condition existing in many dyehouses. A condition easily put to right, but neglected in many cases for the same reason pointed out by "CONTRIBUTOR NO. 6777"—"Giving little consideration to the many dyer's problems."

In a paragraph "CONTRIBUTOR NO. 6610" said that "the dyehouse is notoriously a disagreeable place in which to work, especially during the winter months when the steam fog is so dense that it is difficult to see what is going on." There is no excuse for having steam condensing in the dyehouse, but in one mill I had to argue until I was black in the face, and it took me 10 years to convince my employer how easy it was to eliminate the fog. I still believe that the reason he finally installed an air conditioning unit was because the constant moist fog rotted the ceiling of the dyehouse which started falling dangerously in large chunks, and a new roof had to be put on. In this case,

when the dyehouse was equipped the builders had put in four steam radiators which were quite adequate, but during the first winter a careless watchman having neglected the fires during a cold night caused several steam radiators to burst. Instead of fixing or replacing them with new ones the superintendent conceived the happy thought of taking the radiators out of the dyehouse and using them in place of the ones that had bursted. In spite of my protests I could only save the radiator in my office and from then on my fog problems started. On very cold days I had to keep my window next to the radiator open, to blow some of the heat from it and drive the condensing steam toward the exhaust fan on the other end of the room. In this way I managed to keep about three feet of clearance between the floor and the fog and prevent the men from falling into each other or in the tubs and pails about the dyehouse. It was a case of freezing or choking and breaking limbs, and we preferred the former because we could keep our overcoat on for protection against the cold.

As I said, this happy condition lasted many winters, and caused much damage, but spotted goods caused by drops from the constantly drenched ceiling were blamed on something else, until one day a large chunk of ceiling dropped on a dusty fire sprinkler, which was straight above a bleaching tub where there were 200 dozen pairs of silk stockings being bleached. Before I was notified of what had happened that bleach and the goods therein got the benefit of the thousands of rust particles scattered over it all. A new roof was put on, but it was two years later before the management decided what kind of air conditioning was more desirable.

Dyer's Opinion Will Be Sought. The dyer of tomorrow will be called in consultation when changes are desired in the make-up of fabrics, to select new fibers, create new designs, and when changing styles. As he is the one responsible for the final outcome of the processing his opinion in the matter will be considered.

The dyer of tomorrow will be able to do 100 per cent efficient work, because having eliminated all uncertainties, dyeing will be brought to the level of all scientific operations. When everything in the dyehouse is tuned up to mathematical precision, tests and correct formulas worked in the laboratory, dyeing a batch of goods will be done the same way as laying bricks, so many in a given time.

The Future Dyehouse

Judging by the progress achieved by chemistry in the field of artificial fibers during the last decade, I am firmly convinced that, in the near future, dyeing as we know it today will be done away with.

The natural fibers, with their uncontrollable imperfections, will lose their supremacy in the textile field, and the nearly perfect, scientifically made fibers will be, some time in the future, pulled out of the spinneret in all the colors, shades and combinations desired.

Science has succeeded in obtaining threads quite similar to silk, wool and cotton which are in some respect an improvement on the natural fibers, which is the main reason they are so much in demand. Attempts at drawing the yarn already colored have been made with some measure of success. The reason advanced as a drawback in the production of yarn already colored is fickle fashion, which demands a change of shades for every phase of the moon. Even that should not prove to be an unsurmountable obstacle and one of these days somebody will find a way to overcome that.

Then dyeing as a profession will be no more. It will go the way of the horse carriage, the kerosene lamp and the hand loom, and what little dyeing there will be left will be done at the same rate that hand weaving and hand knitting are done now. The dyehouse will be an art shop and dyers will be known to posterity as the followers of a lost art.

CONTRIBUTOR No. 6860

Hosiery Shipments During March Highest on Record

The National Association of Hosiery Manufacturers reports for the month of March total shipments of all types of hosiery combined amounting to 13,141,535 dozen pairs. This is the largest monthly volume ever attained in the history of the hosiery industry. During March 1938, total shipments amounted to 12,076,842 dozen pairs, 8.1 per cent less than the March 1939 total. In March 1937, the previous record of monthly shipments was established at 12,554,643 dozen pairs.

All major types of hosiery with the single exception of men's half-hose increased in March 1939 over March 1938. These increases range from 2.1 per cent in ribbed goods to 41.7 per cent in anklets. Slack socks, which are a substitute for men's half-hose, and which are included with other anklets, have for some time been steadily increasing and this may be the reason why shipments of men's half-hose have not increased along with the other types.

Cumulative shipments of all types of hosiery during the first three months of 1939, January through March inclusive, amounted to 33,887,003 dozen pairs, as compared with 30,649,439 dozen pairs shipped during the first quarter of 1938. During the first quarter of 1937 there were shipped 33,873,880 dozen pairs. The first quarter of 1939 is the highest first-quarterly cumulative total ever reached in the history of the hosiery industry. The full-fashioned branch of the industry registered a 10.1 per cent increase in the first three months of 1939 over the first three months of 1938, while the seamless branch registered approximately the same increase, namely, 10.8 per cent. In the seamless branch of the industry, however, men's seamless half-hose fell off 9.0 per cent from the first quarter a year ago, and woolen goods fell off 4.9 per cent for the same period.

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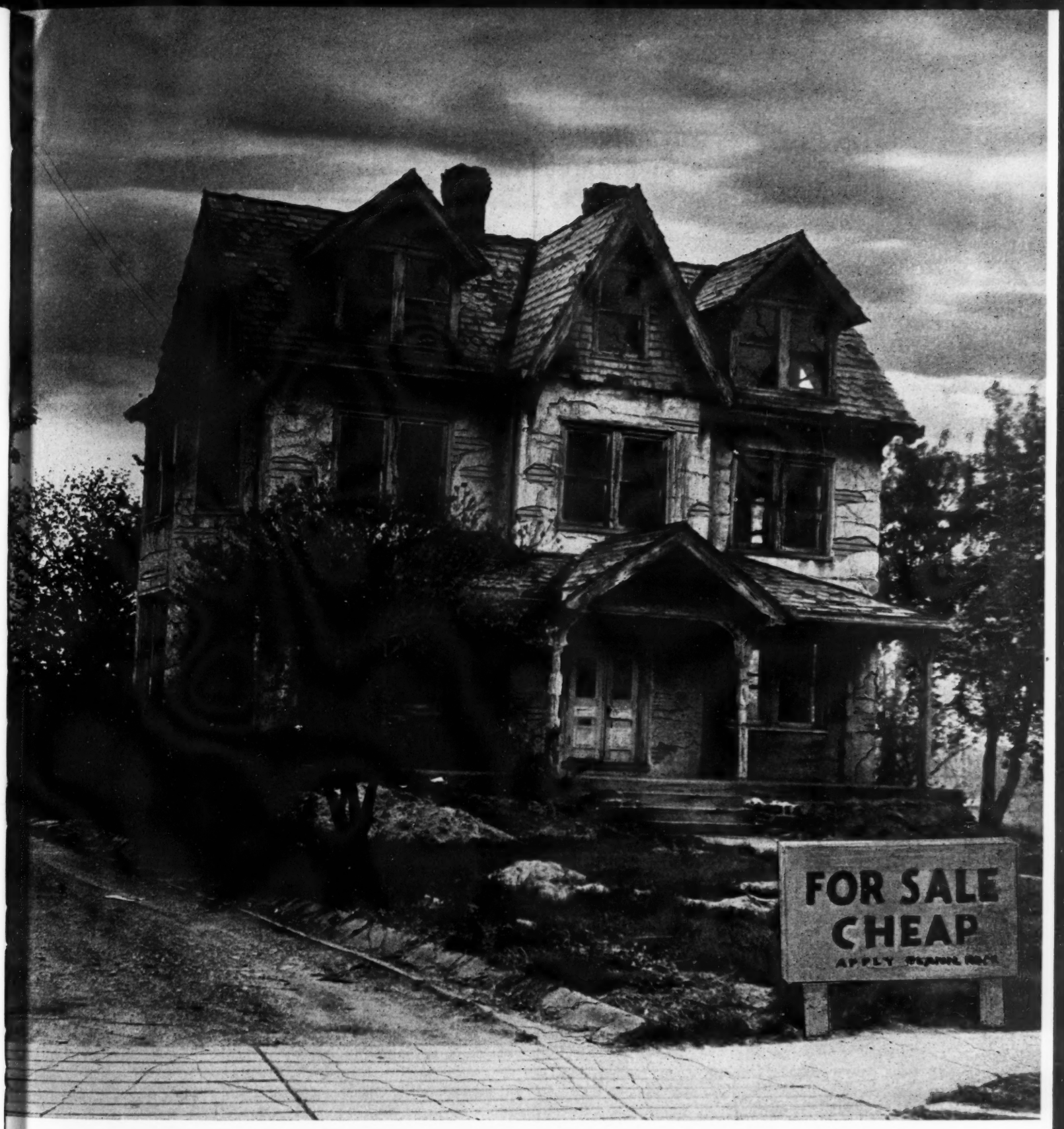
Fidelity Acquires Germantown Machine Works

Fidelity Machine Company, Philadelphia, Pa., has recently acquired the Germantown Machine Works, of Germantown, Philadelphia, and it is requested that correspondence heretofore directed to the Germantown Machine Works be sent to the Fidelity Machine Company, Philadelphia. All patents owned by this company have been acquired by Fidelity, which will assume all business of the Germantown Machine Works at its offices, 3908 Frankford Ave.



"If you buy a bad thing you will soon be buying again"
IRISH PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

KNITTING KINKS

Every Unnecessary Step Costs Us Money

"No one can do two jobs at the same time and do them as well or as quickly as if he were doing one."

EDITOR COTTON:

During the past decade the seamless hosiery industry has made wonderful strides and has kept pace with other branches of the textile industry insofar as the mechanical end is concerned, but labor, especially in steamless mills, lags behind in efficiency.

With the department stores full of fancy half-hose retailing at 10 and 15 cents a pair, hose from 20 cents up, to say nothing of seconds being offered at four pairs for a quarter, it is time we were giving more serious thought to a more efficient organization in the mill personnel.

Knitting mill workers are just as intelligent and willing as is any other class of employees; the fault is with the management, and it seems that those in charge do not realize the importance of dividing the tasks according to the skill required.

I know scores of mills that are requiring their high-priced fixers to spend a good portion of their time in replacing bad needles, fixing and dressing belts, oiling, and making minor machine adjustments, work that a second-rate fixer or one with less experience could do just as well and for less pay.

And, why should a good knitter, capable of earning $20 to $25 a week, spend 50 to 75 per cent of his time in turning and looking over the hose as they come from the machine? Inspecting behind the knitters does not require a great amount of experience; an 18-year old girl or boy who has never seen the inside of a mill can learn, in a day or two, when a machine is misplaiting or making bad work, and can take care of 40 or 50 machines for $13 or $14 a week. Then, instead of the customary 25, the knitter could keep a set of 50 machines going.

Imagine a fixer getting 75 cents an hour setting up some new machines, trucking them to their places, un-crating them and cleaning the grease off. Of course he would not do that; his time is too valuable, so the superintendent would put a common laborer to do the unskilled work. The fixer would give his time to setting up the machinery and getting it in working order. I contend that if a good fixer did not have to do so many of the things that a helper could do, he could keep up not only 25, but 50 spirals or "K's".

Other industries have found specialization and division of labor profitable, and there is no reason why the hosiery mill should not. If Japan, with her cheap labor and her lower standards of living, can produce more dozen per operative than our knitting mills can then there is something wrong over here.

I have been in some fairly large looper rooms recently and have observed loopers and gray goods inspectors leaving their places to get their work. Productive workers should not be expected to do non-productive work, especially is this true of piece workers. While a looper is away from her machine pushing a truck or gathering up socks, she is losing money, and so is the firm.

Even in the boarding room there is room for improvement. Take a ladies' hose boarder for instance, working on metal forms; he spends nearly half of his time getting the goods out of the dye nets, putting them in his trough, picking them up one at a time, and occasionally fumbling one, pulls it on the form and finally places the toe, the gore, and back seam, pulls the hose down to the mark (if it will come down without tearing) and then straightens the welt.

So we see that the only difficult parts of boarding are confined to the last 5 movements, and these are the ones to which he should confine his efforts. Two helpers should be provided, one for getting the lots, putting them in the trough and pulling each one on, the boarder putting the finishing touches on; the other helper to strip, stack and set the finished lot off.

With this arrangement, one boarder and two helpers could take care of 48 forms and do the work of four boarders who do the work in the usual way.

In the pairing room it is customary for one girl to inspect the work from the boarding room for bad boarding, off colors, holes and seconds, and in addition to that she pairs and counts, all in one operation. In some cases, she mends, tacks on the rider tickets, folds and boxes the same lot.

Inspecting is one job and pairing is another. No one can do two jobs at the same time and do them as well or as quickly as if he were doing one. There is too much to look out for.

In the pairing department the girls should work in groups of three, one inspector and two pairers at each table, all three working on the same lot. Two or more persons working together will, as a rule, do more work than the same number working individually.

What I have said may sound radical to some of the more conservative mill men, but every forward step in industrial progress has been considered radical at the beginning. I am not advocating an elaborate time-studying system, with a stop-watch, neither do I pretend to be an efficiency expert, but just a mill veteran with 25 years of practical experience back of me.

For nearly a quarter of a century I have been a reader of COTTON, and I have gotten many an idea

from the practical discussion section; in turn, I am writing this letter with the hope that it may contain some idea that will start us to thinking of ways by which it may be possible for us to produce a greater number of dozen hosiery per operative with the same amount of effort.

CONTRIBUTOR NO. 6606

End Needle Losing Stitch on Full-Fashioned

EDITOR COTTON:

I wish to answer the question by "CONTRIBUTOR NO. 6690" on page 124 of the August 1937 issue of COTTON. He is having trouble with the end needle on either side losing its stitch when knitting a separate section of mercerized yarn for topping waste.

Too much drag on the yarn will cause the selvage needle to lose its stitch. Also, the carrier fingers might be examined to see if the tubes are too high as this will cause the needle to lose the stitch. I might say, when pulling carriers out, back up on them a little, then put in position and lock the friction. This will give the yarn a little slack at the starting point and will prevent pulling the needle to one side on the first course.

CONTRIBUTOR NO. 6816

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EDITOR COTTON:

The following is my opinion, which you may publish for "CONTRIBUTOR NO. 6690" and others. He is having trouble with the end needle on either side losing its stitch when knitting a separate section of mercerized yarn for topping waste, using the full-fashioned machine.

I presume he is making a split opening on one needle on each side where he makes his ravel courses. To make a one-needle split you must be certain that the carriers are set properly and that the right tension is on the snapper. We will call the heel carriers the outside carriers and the ravel course carrier the inside carrier in order to make a one-needle split and not have a drop stitch. The inside carrier stops must be set so that the carrier will stop one sinker outside of where the heel carriers stop. If there are split dividers in on each side, I'm sure there will be no drop stitches. Of course, the mercerized yarn must be the right size to correspond with the construction of the hose being made. A 70s/2 is all right for a 3- or 4-thread stocking.

The reason the end needle does not knit is that the carrier stops just outside of the last sinker and when the needles go down, the end needle will have the thread under the beard, but when the needles come to the upright position, the end sinker doesn't catch the thread and therefore there is nothing to hold the stitch. When the carrier moves across, the stitch pulls away from the end needle. It is the same thing that gives a one-needle split when two carriers overlap one sinker.

CONTRIBUTOR NO. 6819

Pull Threads

WE OFTEN HEAR that an epidemic of the flu is going around. Occasionally this happens in a hosiery mill, except that the epidemic is one of pull threads. We try to fight the moth, termite and other bugs because we know just where they are, but we do not always know just what is causing the pull threads in our hosiery.

Usually pull threads are caused by nothing more than carelessness on the part of the operative or lack of interest by the supervisors. We will try to give a number of causes of pull threads and see if most of them could not be eliminated.

Often we see a boy or girl working in a hosiery mill with a ring on the finger. If there is a bad prong on this ring or a rough edge around the ring, what would happen to the silk stocking every time this comes in contact with this jewelry? It would pull threads in the hose by the hundreds, yet there are mills that permit the operatives to wear rings.

The wrist watch is also a dangerous piece of jewelry to wear in a hosiery mill. Any rough surface about the watch or band can catch the small threads and pull them out of position, causing faulty merchandise.

Rough fingernails are the source of many pull threads. Once in a mill where we worked the management made arrangements to have every girl's fingernails manicured each week. The girls were overjoyed because they wanted to have manicures, and the manicurist profited because she had a certain amount of business that she could count on each week. The party that received the most benefit from the manicurist arrangement was the mill as the number of pull threads was greatly reduced.

Even though the plant may not have a manicurist, the operatives should care for their hands and nails, filing them to make smooth and cutting the loose skin away from around the fingernails. A broken fingernail could cause immeasurable damage to hosiery in a day's time. It is advisable to use some kind of softener on the hands to prevent any roughness of pulling the threads in the hose as they are handled.

The furniture in a hosiery mill, such as tables and chairs, should be kept smooth so that loose-hanging stockings in a bundle will not catch as the operative walks by with an armful. Many of the bins for storing gray goods are rough and the goods are damaged at this point.

One plant stores the gray goods in sugar bags, which protects them from the rough parts of the bins.

We have actually seen goods sorted on the cement floor of a mill, which everyone knows has rough surface, and some operatives use wooden boxes or cases to work on. This is a dangerous practice.

A careless shipper may throw the work in the bins in such a way that the hosiery catches on the rough edges of the bins, or he may permit the goods to come in contact with his pencil point or his watch chain. By all means the bins should be inspected at least twice weekly to see that they are not rough.

Each department has equipment in it that may catch and pull threads in the stockings. It is advisable to make a thorough inspection of all equipment at regular intervals to keep it free of rough places that can snag the goods. Often trucks for transporting the goods have rough sides, and these could be protected with cheese cloth. The same thing could be done to table legs.

Many times the operative knows that a hose has been pulled, but does not report it and have it repaired at once; by the time this pulled stocking has passed through several other hands the hole has probably become so large that it either cannot be repaired or else the stocking must be classed as a third.

We all know the cost to the mills for pull threads, and with the stocking passing through more than 20 operations before it is worn by the consumer, it behooves us to make an effort as much as possible to eliminate the causes of this costly defect.

Prevents Heels and Toes Sticking Up

ON PAGE 120 of the June 1938 issue of COTTON, "CONTRIBUTOR NO. 6802" requested information concerning a method of preventing the heels and toes from sticking up between the sinkers and dial on his S & W machines. His question in full follows:

We have Scott & Williams 3½-inch 300-needle machines on which we make a 4-thread knee-length style. The heels and toes are made of two ends of 100s/2 mercerized yarn. We are having trouble with the heels and toes sticking up between the sinkers and dial. Everything has been done to correct this trouble but we still have it—some days worse than others, according to the atmospheric conditions. A short welt is knitted on this style and we have found that by raising the dial the trouble is overcome to a certain extent, but then we cannot raise the dial too much or we will have other trouble with the make-up and transfer. We have also found that keeping the heels and toes on the tight side is helpful, but not a certain cure. Besides, when the toes stick up in the machine and it starts to knit another stocking, the dial jacks push the toe into the needles and many are broken. Our machines are equipped with steel inside sinker rings and we use the regular S & W 3759 and 3760 sinker. The make-up courses are made of 4- and 6-thread silk and the short welt is ½-inch long, being made of 6-thread silk.

We know the weight of the stocking has something to do with this trouble because we have run a 7-thread full-length style on these same machines and did not have nearly so much trouble except on damp days.

The following answer to this question was submitted by "CONTRIBUTOR NO. 6858":

I have had experience with the same trouble that this man states he is having, and since he has tried to overcome it in various ways, I suggest he try a few simple remedies.

Assuming that the machines have fashion-marking attachments, check the riser cam on the right (reverse) side of the machine to see if it has been ground down. If it has, renew it, or if it is not ground down too much, run the bumper screw in to make the sinkers come in as early as possible.

Also check the adjustment of the riser cam and bumper screw on the other (left) side. This will push the work off the needles and will also loosen the fabric.

Now run the machine enough to size it up and adjust the dial about 1/32-inch above the sinkers on the transfer. This should be high enough to give good results but not high enough to cause welt trouble.

Another important place to check is the work can. The work can should be just low enough to clear the bottom of the inside sinker ring. In some cases this brings the fins so close to the dial that the work will not pass over them. This does not mean to lower the can, but to unsolder the fins and lower them about ¼-inch.

If the can has wire fins, I think, in this instance, they should be replaced with sheet metal fins, lowering them when putting them in place.

I believe that after these few simple adjustments the trouble will disappear.

Waste in a Hosiery Mill

IT IS A GOOD IDEA to educate the operatives in a hosiery mill along the lines of sales problems, such as returns on defective goods, rejections for faulty work, etc. This may cause the operative to give some serious thought to being more careful when handling the stock.

An operative on a job paying more than the company thinks the job is worth will save the company more money than an operative making less on the job than the operative thinks the job is worth.

Hosiery produced by the first and second shifts may be spray tinted a different color in the gray in him that this practice was injurious.

I once saw an operative in a hosiery mill walking about on top of a lot of gray goods. He had no idea that he might be causing damage to the goods that could hardly be traced, and evidently no one had told him that this practice was injurious to the goods.

By collecting the silk waste at each machine after the shift is over, and keeping a record of this, the management can trace the source of much waste by the knitters.

A careless shipping or packing clerk can cost the mill a lot of money in a year's time by making an error of a dozen or so stockings too many a day; or can give the mill a bad name if the error is on the short side.

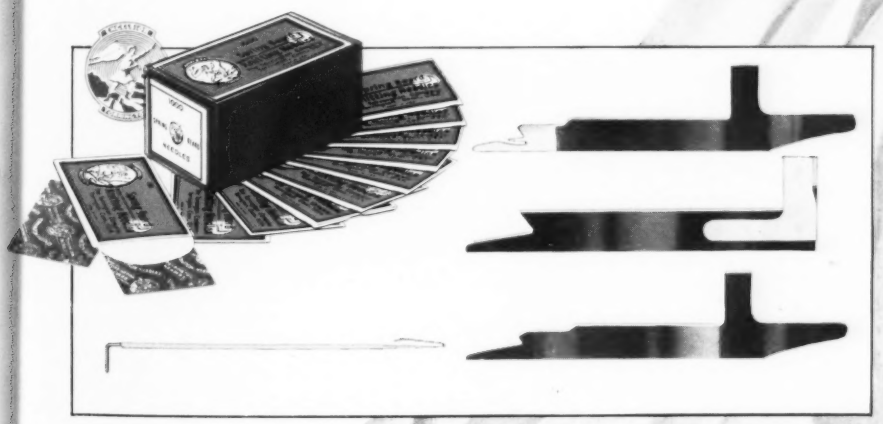
Knitting needles cost money. As long as the knitter has access to as many needles as he wishes, without any record being kept of those used, he will find little cause to straighten them, but will simply use a new one.

One of the greatest wastes in industry comes from not making full use of an employee's suggestions. Suggestions should be encouraged and welcomed.

Strange as it may seem, some knitters cannot identify the various styles when shown a leg or foot. If they could identify the styles, wouldn't much of the waste from mismatching be eliminated?

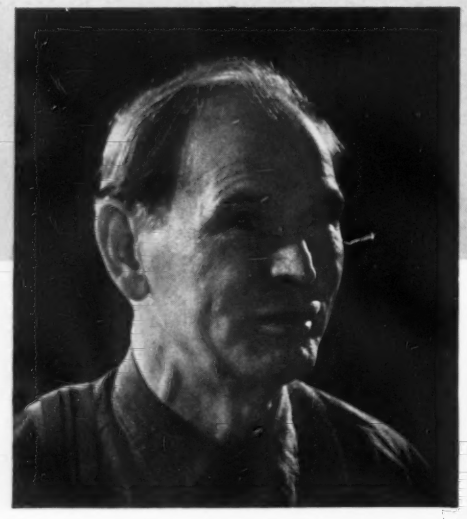
"EXQUISITELY SHEER"..."AMAZINGLY STRONG."

This is how America's leading hosiery manufacturers point out the contrast between the shadowy sheerness of modern silk hosiery and its substantial strength. It is a tribute to the ingenuity of the manufacturers who supply the hosiery industry with materials and equipment that make this strength and sheerness possible. Torrington Needles, made by special machine methods with machines specially developed by Torrington engineers, have played an important part in advancing the quality of modern hosiery... and their extra machine-made uniformity of finish, temper and dimension is becoming increasingly important in maintaining standards while keeping costs at a minimum.



TORRINGTON *Needles and Sinkers*

12.5% gave "Most Satisfactory" as their reason* for using TORRINGTONS



An independent research organization, conducting a survey among users of Torrington Needles, asked this question, "Why do you prefer Torringtons?" 12.5% of the mill executives questioned said "Because they are MOST SATISFACTORY." This reason was just one of the many given by individuals in the entire group, but it expresses, as do all the other answers, the remarkable confidence mill men have in *machine-made* Torringtons. This confidence was evident in the tone of all the answers, which were filled with such terms as "Smooth finish". . ."economy". . ."better results". . . "longer life". . ."better temper". . ."greater uniformity."

When a product can bring forth such whole-hearted expressions of approval from a critically-minded group of mill men, it must have *extra* quality value. That extra quality value you will find in *machine-made*, *machine-tempered* and *machine-finished* Torrington Needles.

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A.
Established 1866

The Torrington Company . . 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc. . . 200 Fifth Ave., New York, N. Y.
The Torrington Company . . 538 South Wells St., Chicago, Ill.
The Torrington Company . . Guilford Bldg., Greensboro, N.C.
The S. M. Supplies Co. . . 210 South Street, Boston, Mass.
E. G. Paules . . . . . Bendix Bldg., Los Angeles, Calif.
The Torrington Co., Ltd. . 137 Wellington St. W., Toronto 2, Ont.

Factories at

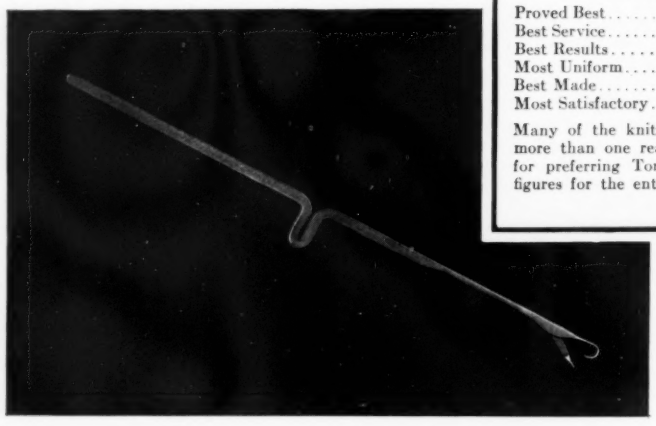
Torrington, Conn. — Upper Bedford, Quebec
Coventry, England — Aachen, Germany

MOST SATISFACTORY means that users have found through experience that the extra fine machine-made finish, temper and uniformity of Torrington Needles give them greater efficiency and economy of knitting machine operation.

***MILL MEN'S REASONS FOR PREFERRING TORRINGTON NEEDLES**

Proved Best	18.2%	High Quality	12.5%
Best Service	17.0%	Better Temper	9.0%
Best Results	15.9%	Last Longer	6.8%
Most Uniform	14.8%	Economy	2.3%
Best Made	13.6%	Smooth Finish	2.3%
Most Satisfactory	12.5%	Miscellaneous	11.4%

Many of the knitting mill executives surveyed gave more than one reason under the above classifications for preferring Torrington Needles. As a result, the figures for the entire list total more than 100%.



Precision standards in knitting needles can be obtained only by precision methods of manufacture. Torrington employs machine methods that have brought new standards of accuracy to practically every step of production, and these standards are reflected in the efficiency of Torrington Needles.

TORRINGTON *Latch Needles*

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

Further Advance in Silk Causes Hosiery Curtailment—Profit Margins Narrower Until Goods Prices Rise—Underwear Industry Operated Normally During First Quarter—Learner Problem Causes Manufacturers Concern—First Quarter Hosiery Shipments New Record

Philadelphia, May 16, 1939

ALTHOUGH COTTON AND WOOL have strengthened during the last month, imparting a firmer tone to such yarns, the outstanding price movement of the month has again been in silk which has hit new peaks for the year even though American hosiery mills have been curtailing in rceent weeks and using less of this commodity. Indications are branded full-fashioned hosiery mills will not make any change in their goods prices until June 1 or possibly when the fall numbers are shown but seamless women's hose makers have put into effect and have secured advances although not commensurate with the silk advance. The relative scarcity of good cotton in the open market, outside the Government loan stocks, has brought about a gain in cotton prices and also in differentials for the various lengths and grades so that spinners have been forced to harden quotation even though demand until the last week has been quiet. A similar trend is apparent in wool and its products where primary market creeping advances have brought about a steadier tone to worsted and woolen yarns and in its wake a much more active coverage in yarns for fall. This has brought about more interest in fall outerwear as many feel bottom prices have already been struck. Rayon for knitters has not changed in price.

Full-Fashioned

Although manufacturers of such lines are curtailing and have been since right after Easter, some running less than half time, they had a very active first quarter this year. The industry shipped out more full-fashioned hose in the first three months than in any other similar period but now the situation in silk is handicapping this good record. Manufacturers have not been able to raise hosiery prices in accordance with the sharp increase in silk prices so that most have been curtailing drastically until they are able to bring prices of their product up to the new raw material level. This will be done in a month or so when fall prices are named and later unbranded mills will bring their prices up to a corresponding level. It is not felt that demand at the consumer end will be greatly affected by higher price tags which may go up five to ten cents per pair. Some manufacturers feel that they should cheapen slightly some of their lines by using rayon or mercerized in the welt and foot where all silk was formerly used but the better hosiery will continue to be all silk. Prices of unbranded full-fashioned while higher have not changed much and as yet utterly fail to reflect the more-than-a-dollar increase in silk from a year ago.

Men's Half-Hose

This has been the least active branch of the hosiery field. Jobbers report that aside from quick demand for short socks with elastic tops, called slacks, coming with warm weather, they have been doing little in half-hose and most of this has been in the cheaper lines with most declaring that demand for the 50-cent types has been poor this year. It will be a good retail season for slacks in the coming months. Production of men's half-hose in the first three months this year was smaller while other branches of the industry showed gains, dropping about 10 per cent. In March shipments were off more than 10 per cent compared with the same 1938 month. It is possible some jobbers and retailers bought too heavily in these lines earlier and that demand will pick up when these stocks have been liquidated. Manufacturers are beginning work on the next fall and winter lines and some have bought worsted yarns for this use in the last few weeks.

Seamless

This type hosiery has reflected the advance in silk more so than any other. There have been advances up to 40 cents in 300-needle women's lines and while these have not been paid in many instances as yet they point to what is ahead and very shortly as manufacturers are powerless unless they cheapen the construction in view of the continued strong raw market. There has been talk some mills will cheapen the construction to keep old price brackets but this is not general. Anklet sales have been a feature this year showing the best increase in shipments, being approximately 9,200,000 dozen pairs the first three months compared with 7,200,000 in the like 1938 period. Reflection of this has been in active demand for mercerized and Durene yarns. Jobbers report that cheap anklets have been the volume movers in the ordinary retail store, meaning lines to retail around 10 to 20 cents. Higher silk may aid the sale of women's seamless rayon numbers later on.

Underwear

The first quarter production with underwear mills made a good showing both compared with last year but more importantly as compared with the average for that period. This good record was mainly due to the large bookings that many mills had in spring numbers with early delivery asked by such buyers because they wanted to get away from any possible change in the wage minima and it was also due to wishes of many to have some of these goods in stock. Quite a number of these mills now are at the end of their spring orders and find the heavyweight situation slow to develop, but with the warmer weather expected to move seasonal goods and make fall coverage more possible. Men's knit shorts or briefs are coming into much greater prominence and have made important inroads on woven goods. Prices for fall underwear continue low and will have to go up especially if the underwear wage level is changed before the season is over. Higher cotton in addition is now imparting a firmer tone to goods prices.

Outerwear

Firmer wool and top prices have imparted strength to worsted knitting yarns and hosiery and outerwear manufacturers have in the last two weeks placed large orders for yarns to go into fall lines. In turn some large buyers of outerwear and hosiery have placed orders both trades feeling that the lowest prices of wool lines have already been seen. Outerwear plants are between seasons but will get busy in the next few weeks on fall sweaters; swimsuit mills are having a fair season and somewhat better than 1938 on worsted knit garments; hosiery mills are beginning to make fall and winter wool lines but they are proceeding cautiously. Jobbers say they did not carry over much stock of wool hose from the previous season which will help in coverage in the new lines.

New Highs in Raw Silk Cause Hosiery Curtailment

Hosiery manufacturers have been advised to confine their operations to orders only and to bear in mind the risks involved in building up stocks at present prices of raw silk. Earl Constantine, president of the National Association of Hosiery Manufacturers, in a special statement to the industry, also made the suggestion that hosiery mills using silk should advance their summer closing into May or at the latest early June. He said a reduction of operations to a point sufficient to take care of current obligations and resulting reduction in the amount of raw silk purchased would seem to be a wise course. Mr. Constantine also emphasized the inability, so far, of the industry to raise its own prices. In this connection there are indications that branded full-fashioned hosiery manufacturers will not make any change in their prices during the remaining weeks of the present season but will depend upon the changes to be made in their fall merchandise to bring hosiery prices to a level more in keeping with the current price of raw silk.

Branded manufacturers may possibly make some advance the first of June as this is the earliest, practically speaking, this can be done in view of the announcement previously of a leader in that field that it would take May delivery orders at unchanged prices. As soon as branded prices are raised the unbranded mills will go up further, but up to the present time there have been only scattered price changes of importance in full-fashioned goods so that it is natural for

Courtesy, Holeproof Hosiery Co.

most manufacturers under these conditions to accept advice concerning curtailment until such time as hosiery prices begin to reflect drastically higher silk costs. Much more progress in advancing prices has been made in women's seamless than in women's full-fashioned. In the former advances of 40 to 50 cents per dozen have been reported in 300-needle goods.

In view of this situation full-fashioned hosiery plants in Eastern Pennsylvania began late in April to curtail sharply. According to Charles Lehmuth of the Full-Fashioned Hosiery Manufacturers of America, Inc., many plants in the vicinity of Philadelphia that were on full time a month previous were now at half time or less. Mr. Lehmuth said the high level for silk together with the inability of knitters to secure higher prices for hosiery was pinching mills in this district. He made the comment this was not a healthy condition and that it would have been better for hosiery prices to begin working up to the new silk basis even before this rather than waiting so long.

Patents Granted on Nylon Hosiery

Four patents for hosiery and other knitted fabrics made of Nylon, the new organic textile fiber derived basically from coal, water and air, were issued to E. I. DU Pont DE Nemours & Co. by the United States Patent Office. With the issuance of the patents officials of the company said the inventions represented a phenomenal advance in the textile arts assuring "a truly successful stocking from a synthetic yarn." The patents set forth that Nylon has great elasticity, strength and wearing quality; that it presents an excellent appearance; that it is virtually wrinkle-free; that it dries extremely rapidly after laundering; and that stockings made of it may be washed repeatedly without material change in their original shape and smooth characteristics. It was stated that Nylon fibers are characterized by high tensile strength, high resistance to moisture and extraordinary opposition to all ordinary solvents. In preparing knitted stockings in accordance with the patents, Nylon yarns of varying sheen may be used. The yarns may be lustrous, semi-lustrous, or dull. Nylon takes dyes used for silk, cotton or rayon and excellent effects are obtainable, it was stated, with acetate dyes. Other types of fibers and yarns such as silk, viscose-rayon, and cellulose acetate may be used if desired in combination with Nylon fibers and yarns. It was stated a characteristic of Nylon hosiery is its rapid drying after laundering, absorbing comparatively little moisture and having virtually the same strength when wet as when dry. It was also claimed that Nylon fabrics are affected in a remarkable way by steam or hot water setting, improving them in various ways. For instance, steam treatment enhances the elastic recovery, crimp and crease retention. It was stated so pronounced are these effects that Nylon stockings are as smooth and free from wrinkles after laundering as when new.

Apex Decision Appealed by Hosiery Federation

Federal Judge William H. Kirkpatrick in the Philadelphia District Court on April 24 upheld the $711,932 triple damage verdict awarded the Apex Hosiery Co. against Branch 1, American Federation of Hosiery Workers, and its president, William Leader, that was handed down by a jury on April 3. The case will be appealed, however, by the union to the Third Federal Circuit Court of Appeals with the hope that there can be a hearing on it before the summer recess begins.

Judge Kirkpatrick's decision was not unexpected as he had stated previously the defendants would have to give him definite and convincing reasons that he should disregard the far-reaching decision of the Third Circuit Court which over-ruled him two years ago when he dismissed an injunction suit by the company against the union on the ground the case did not come under the Sherman and Clayton anti-trust laws. In his decision Judge Kirkpatrick adhered to the Circuit Court decision, explaining that it was not wiped out by the Supreme Court when it reversed the Circuit Court's order for an injunction to evict the 200 sit-down strikers whose damage to

the plant during the seven weeks they held it two years ago, was responsible for the triple damage suit of the company under the Sherman Law. Judge Kirkpatrick said in his decision that the Supreme Court reversal applied only to the injunction, as the necessity for that had been removed when the strikers evacuated the plant and later settled their differences with the company, thereby rendering the injunction case "moot."

By agreement of council the individual membership of Branch 1 was removed from liability in the case but the American Federation of Hosiery Workers declared that if the decision is upheld in the higher courts it will be a severe blow against labor unionism. The union claims the Apex decision would turn the Sherman Act into a union-breaking device, adding that if during strikes damage is done there is protection for those damages in a civil suit in the State or County Court. Opinion in the trade is now equally divided as to what decision in this case will come when action on it is taken by the highest court in the land.

Labor Board Order on Berkshire

All employes of the Berkshire Knitting Mills, Reading, Pa., who went on strike on October 1, 1936, should be reinstated according to recommendation in an order issued April 30 by the National Labor Relations Board. The NLRB found that of the 303 employes mentioned in the complaint against the company, 18 were discriminatorily denied reinstatement and three were discrminatorily discharged. These 21 employes it was held must now be reinstated with back pay and the others, it was ruled, must also be reinstated, but charges of discrimination against them were dismissed without prejudice. The NLRB order directs the company to cancel its contracts with the employes' association, which is found company-dominated, and to cease to discourage membership in Branch 10 of the American Federation of Hosiery Workers. The proposed order, handed down nearly a year and a half after conclusion of the hearing at Reading and two and a half years after the strike was called is subject to appeal by either the mill, representatives of the employes' association or the American Federation of Hosiery Workers before a final order is made.

"We conclude," says the NLRB order, "that the respondent's unfair labor practices should not be imperfectly remedied and that the important national policies of the act, which should be fulfilled in this case, by the reinstatement of strikers, should not be imperfectly effectuated, because some of the respondent's striking employees have violated other laws, where such violations have already been punished by the appropriate law enforcement agencies and are not of such a character as to disqualify any of the strikers from employment." No statement has been issued up to the present time by the Berkshire Knitting Mills what their plans are relative to this order.

116 New Full-Fashioned Mills in 1938

The Textile Machine Works in its eleventh annual statistical survey covering the full-fashioned industry for 1938 reports that 116 new mills were opened and 83 liquidated or changed hands during the year. Total full-fashioned mills numbered 404 as of February of this year, operating 16,110 machines. Referring to the old machinery that has been moved to other states more than 300 are shown to have left Philadelphia during 1938, slightly more than a hundred of which passed to North Carolina and about 200 to other points in the South. New Jersey and Delaware accounted for the remainder. New equipment also went mainly to the South which added 21.5 per cent of its original total. The West ranked next with a 3 per cent addition. Of the total production of Reading full-fashioned knitting machines last year 83.1 per cent were 45-gauge and 11.2 per cent were 51-gauge. The southern states in 1938 took 72.7 per cent of the total shipments of the full-fashioned knitting machines turned out by this concern while Pennsylvania took 13 per cent and the West 10.3 per cent. This compares with 51.5 per cent for Pennsylvania in 1929, 26.3 per cent for the South and 6.1 per cent for the West. Full-fashioned knitting machines in 1929 totaled 14,310 of which almost 60 per cent were in Pennsylvania with Philadelphia accounting for approximately 38 per cent of the nation's total and about 8 per cent in the South. In 1938 Pennsylvania accounted for over 45 per cent of the total machines with about 15 per cent of the total in Philadelphia. The South now has approximately 30 per cent of the country's full-fashioned knitting machines.

Courtesy, Textile Machine Works

Penna. Tries to Halt Hosiery Mills' Migration

Another step was taken by Pennsylvania to stop the migration of hosiery and other manufacturing plants when Governor Arthur H. James on May 10 signed bills previously passed by the legislature creating a new Department of Commerce and naming Richard P. Brown, of the Brown Instrument Company, Philadelphia, to head the new state agency established to attract new industries to Pennsylvania. About $800,000 will be appropriated for its work. In accepting the appointment Brown said, "For several years we have been witnessing the exodus of certain industries from Pennsylvania and what is more serious, the failure of new industry to come in to replace those which have migrated. Now for the first time in Pennsylvania's history our business people and all those who wish to work and live in this great industrial state will have a department of the state government primarily devoted to aiding business and encouraging its expansion in Pennsylvania and what is equally important to acquaint business and industry everywhere with the many advantages of locating in Pennsylvania with its great market of ten million people." Hosiery interests identified with the Full-Fashioned Hosiery Manufacturers of America, Inc., and the American Federation of Hosiery Workers have held numerous conferences in recent months in their effort to save the hosiery industry in that state.

Reduced production accompanied by more unemployment has been reported among large underwear mills as a result of the operation of the Wages and Hours Act. Complaints of this kind from manufacturers concern the situation under the act as to handicapped workers and learners. The more serious complaint concerns the learner situation under the new act. Paying learners during their training period the same rate as experience help is at variance with the practice of underwear mills over a long

time and one which has proven successful and also acceptable to employees, manufacturers declare. In the underwear industry the labor turnover amounts to about 20 per cent a year. As new help was wanted the practice has been to notify the community and applicants have responded to fill the need.

Underwear Mills Cut Down on Learners

Much of the underwear production is on a piece-rate basis, a standard of output having been arrived at for different operations and the new help manifestly could not at first produce up to this standard. When they reached the experienced stage they were automatically paid the full rate. Under the present new situation created by the Wage Act it is of course uneconomical to start learners off at full rate of experienced help as manufacturing costs would be completely disorganized. The experienced help also would naturally resent the change and move for a higher rate for themselves. In view of this mills have lately been witnessing a gradual loss of help which they could not replace as under the old system. Production is being thereby cut down, raising overhead, and upsetting profit calculations as well as making deliveries to customers uncertain.

Brief Knit Shorts Make Gains

In the race between the newer knit brief shorts and the older woven styles for the men's and boys' underwear business the knit briefs are closing the gap more surely this season than ever before. Buyers of underwear in large department stores report that in the men's sizes the margin in favor of the woven shorts is being closed this year and that in boys' sizes there are indications of the knit briefs actually running ahead. One manufacturer stated sales this year show a gain for the knit briefs of 40 per cent over the same time a year ago.

Hosiery Imports Larger from China

Imports of cotton hosiery from China together with increases from Japan of the same type goods featured a recent report of the Department of Commerce tabulated by the National Asociation of Hosiery Manufacturers. The increase for China was the more striking, representing the largest amount for any month from that country with the single exception of December, 1936. This increase of imports from China is also of interest in view of the understanding that the hosiery industry of that country had been largely taken over by Japan as a result of the war between the two countries. The hosiery market itself, but not the association, was wondering whether the entries from China did not actually represent merchandise made in Chinese mills but under Japanese supervision. During March total hosiery imports of all kinds amounted to 100,165 dozens valued at $68,076.

Hosiery Exports Make Sharp Gain

Exports of hosiery during the first quarter totaled 270,433 dozen compared with 206,433 dozens in 1938, according to the National Association of Hosiery Manufacturers, which emphasized that all types of hosiery except children's cotton numbers shared in the March increase. It also found that an unusually large amount of women's full-fashioned hosiery was exported during March this year to the United Kingdom, the amount being larger than for any month in many years. The association doubts, however, that the recent tariff concessions granted this country's product by the United Kingdom have been solely responsible for this gain. It notes that the general export increase affected all types of hosiery and furthermore that gains in exports of women's full-fashioned took place in at least four other countries. Under the tariff agreement of last November between this country and the United Kingdom, the rate of duty of the latter on American hosiery was unchanged but a notable difference was made in that in no case the duty should exceed ten shillings per dozen pairs. The Department of Commerce in a report, however, claimed that the reciprocal trade agreements were in-

FORECAST

(Opinion submitted by COTTON'S market correspondent)

Philadelphia, May 16, 1939

The business outlook has failed to improve during the past month which has been marked by a continuation of the war threat and in addition to this important deterrent there developed the major obstacle of a coal strike which threw almost 500,000 men out of work for several weeks. These factors and the resultant refusal of business to operate with confidence make forecasts ahead less optimistic than were made at the beginning of this year.

The bright feature of the situation is that as business has been working on such a severe hand-to-mouth buying basis the textile industry with but one or two exceptions has improved its inventory position since the first of the year. This means that if the overhanging clouds of strikes and war disappear it will be in a healthy condition to go ahead with full steam later in the year. Even so earlier predictions as to 1939 business and profits must be revised downward.

The textile industry has been marked by firmer commodity markets this month with the further increase in silk being the most important. The continued advance in silk, however, has reached a point where it will act as a retarding influence on the knitting industry until prices of hosiery reflect the silk advance more than they have.

Silk over the month has reached a new 1939 peak which is more than $1.00 over the low of 1938, so that the change is a major one and its effects upon such manufacturers as full-fashioned hosiery knitters cannot be determined as yet. It is sure that until they are able to advance hosiery prices to cover this their profits will be smaller even though they continue active as they were during the first three months. During April curtailment among such mills in this section has been severe, many working only half time now. While silk may not decline much due to the strong stock situation here and in Japan, manufacturers should not speculate in silk and most will continue to buy hand-to-mouth.

Cotton has also been strong this month. In this a major factor is the large amount of cotton in the Government loan and the relative scarcity of cotton in the open market. Spinners are up against it in many cases unless they pay stiff premiums to get staples wanted. This has a tendency to raise cotton, yarn and cloth prices which is apt to be a creeping trend until the Government lets go of some loan cotton.

Wool has been acting very well and the feeling is that if further changes are to come these will be toward hardening, not lower. Many manufacturers acting on this assumption have covered a large portion of their fall season needs at current prices which they feel will be low for the balance of this year as spinners and weavers claim they are almost giving their products away.

Rayon has not changed in prices for knitters and has been slightly less active after a good first quarter. Such manufacturers and yarn producers feel that later this year demand will benefit from the high price of silk and that demand for rayon will improve from that source as well as for the normal fall season coverage. Rayon is relatively cheaper now because prices have not changed while other fibers have strengthened.

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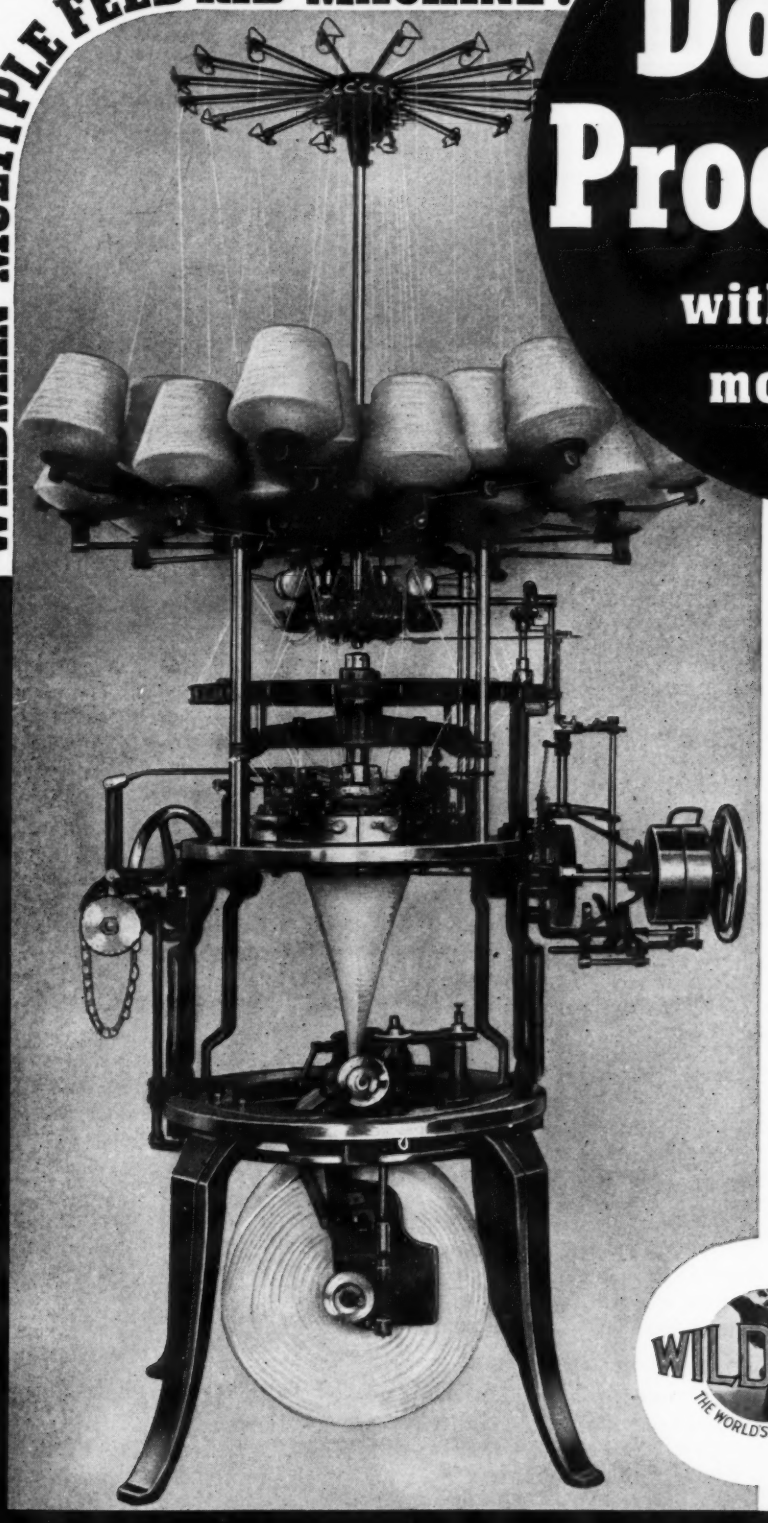
Doubles Production

with only 36% more power



Yes, in comparative tests—a 16-feed machine consumed only 35.4% more power than the same machine fitted with 8 feeds.

And it offers many important economies and product improvements such as: even yarn tension . . . new cones without stopping . . . clean removal of finished roll . . . fewer shutdowns . . . more patterns . . . gear-driven dial—no pinching of the fabric—belt-driven take-up . . . swing-out roll . . . perfect, trouble-free operation.

Write for further details of other exclusive advantages.

WILDMAN
THE WORLD'S STANDARD

WILDMAN MANUFACTURING CO.
NORRISTOWN, PA.

strumental in bringing about a 17 per cent increase in full-fashioned hosiery exports during the first quarter as compared with that during the same 1938 quarter.

14th Chattanooga Golf Tournament

● Knitters and other textile yarn consumers were entertained by yarn manufacturers and salesmen at the 14th annual Chattanooga Textile Group Invitation Golf Tournament, held at the Chattanooga Country Club, Chattanooga, Tenn., on May 25 and 26. More than 200 hosts and guests participated in the outing, which consisted of a two-day handicap golf tournament, a skeet shooting contest, and a banquet with floor show on Friday evening.

In the golf tournament, handicaps were established for the second day by the scores of participants on the first day. On this basis, B. J. Bandy, of Dalton, Ga., was the winner of the tournament, with a net score of 123. He shot a 98 on the first day, which established his handicap at 28, and came through with an 81 on the second day, for a 36-hole net of 123. He received the Chattanooga Textile Group Trophy, and a centerpiece donated by Leon-Ferenbach Silk Co.

Other golf prize winners, listed in the order of their net scores, with the prize and donor in each instance, follow:

Talley Johnston, Davenport Hosiery Mills, goblets, donated by Textiles, Inc. (Mr. Johnston also was awarded the Bob Smith Trophy for Chattanooga knitters.) Bill Barnhart, silver bowl, Smith Drum & Co.; Selman Fortune, radio, American Yarn & Processing Co.; W. R. Sargent, liquor set, United Elastic Corp.; Garrett Johnston, poker set, Scott & Williams, Inc.; Bob McCamy, silver hi-balls, Avondale Mills; Vaden Shadden, sherbet cups, Central Franklin Process Co.; John L. Dabbs, sherbet cups, Southern Mercerizing Co.; Henry Stokes, bread and butters, Ewing Thomas Corp.; A. R. Barnett, pitcher, H. Sweetbaum & Co.; Froggy Johnston, silver pitcher, Dixie Mercerizing Co.; Frank Muschamp, candle sticks, Bliss Fabyan Co.; Ben Phetteplace, cordial set, COTTON; Carl Eiser, traveling bag, Royersford Needle Works, Inc.; A. L. Lewis, platter, fork and knife, Parkdale Mills; Dick Thatcher, electric clock, Laconia Needle Co.; J. H. Fleming, radio, Underwear & Hosiery Review; Bill Rooke, golf irons, Paramount Textile Machinery Co.; Dudley Bryan, poker set, Standard-Coosa-Thatcher Co.; Dick Smith, golf bag, Everlastik, Inc.; Charles Gray, after dinner coffees, Oscar Heinemann Corp.; Tom Yates, golf bag, Patten Hotel; Frank Strain, golf bag, Industrial Rayon Corp.; Jack Wyatt, golf woods and umbrella, Torrington Co.; Henry Crumbliss, golf woods, Gate City Cotton Mills; H. D. Blake, silver bowl, South Fork Mfg. Co.; Bill McNab, silver centerpiece, Cheraw Cotton Mills; Fletcher Kibler, silver compotes, Kaumagraph Co.; James MacDougall, traveling bag, Friedberger-Aaron Mfg. Co.; Clyde Pierce, wrist watch, North American Rayon Co.; Fred Sails, golf jacket, U. S. Testing Co.; Henry Bryan, Univex camera and projector, Tubize-Chatillon Corp.; Charles Comiskey, golf balls, Burkart-Schier Chemical Co.; Jeff Gilreath, candlesticks, Duplan Silk Co.; Neil Ashe, silver bowl, Celanese Corp.; Joe Callicott, electric clock, American Enka Corp.; Moore Patton, electric clock, Ranlo Mfg. Co.; Gene Shea, traveling bag, Quaker City Chemical Co.; George Porges, liquor set, Scholler Bros.; Henry Gilman, sauce bowl, Read House; Jim Cooke, fly rod, Grove Silk Mills; Carl Epps, cocktail shaker, Ira Templeton; Bill Newton, cream and sugar, Laurel Soap Mfg. Co.; Rip Hardeman, silver bowl, Waverly Mills; Bill Jackson, case of champagne, Fidelity Machine Co.; Joe Foil, traveling bag, Barnhart Bros.; Bill Bentel, desk pen, Dupont Rayon Co.; Lee Rayburn, evening robe, Katakura Corp.

Prizes for skeet shooting, awarded under the Lewis system, were won by B. C. Brown (silver bowl, Aberfoyle Mfg. Co.); Cliff Campbell (Savage rifle, Johnston Mills); H. T. Harle (skeet jacket, Textile Age); and B. Lauderback.

An Eye on the Knitting Mills

The Eader Textile Corporation, Highfield, Maryland, has opened its offices and production in the new plant is expected to begin shortly. The company designs and manufactures knitted wear, underwear and pajamas. Some of the machinery has already been installed.

Star Hosiery Mills, Inc., Conover, N. C., has been issued a charter to manufacture and sell hosiery, with authorized capital at $100,000. Construction has already begun on the building to house the plant. Full-fashioned hosiery will be made, which will be sold in the grey, according to reports.

H. A. Vestal, Athens, Tenn., and associates have decided definitely to establish a hosiery mill in Blue Ridge, Ga. The building will be 120x200 feet, air conditioned, and modern in every respect. High grade ladies' hosiery will be made.

The ninth of a chain of full-fashioned hosiery mills, operated by Thomas J. Wallner, of Pulaski, Va., is to be in operation in July at Independence, Va. The plant will cost about $65,000 and 150 workers will be employed.

A small knitting mill for the manufacture of children's hose will be erected at Carthage, N. C., according to reports. The mill will be headed by Cador McArthur, High Point, N. C., it is understood.

Shuford Hosiery Mills, Hickory, N. C., have been sold to J. T. Shipman. Wade H. Shuford, original owner, retained ownership of the building and real estate, it is said.

Whitehall Knitting Mills, Inc., Mt. Holly, N. C., have been granted a charter to make hosiery and other knitted products, with capital authorized at $100,000.

Grenada (Miss.) Industries, Inc., manufacturers of full-fashioned hosiery, have announced plans for construction of an addition 80x100 feet at a cost of approximately $10,000.

A charter has been granted Rutledge Hosiery Mill Company, Rutledge, Tenn., with authorized capital of $100,000. Work has been started on a building to house the mill.

The Roseglen Knitting Mills, Sumter, S. C., have been sold to a group of South Carolinians, according to recent reports.

Elliott Knitting Mills, of Hickory, are erecting a dye plant at Catawba, N. C., in connection with the company's local hosiery mill.

Riviera Hosiery Mills, Inc., South Pottstown, Pa., have filed articles of incorporation, with authorized capital of $15,000.

North American Knitting Company, Mansfield, Ohio, has built a two-story addition.

Athens (Tenn.) Hosiery mills have installed 12 machines for the manufacture of men's hosiery.

Durant (Miss.) Manufacturing Company has installed six knitting machines of German make.

West Point (Va.) Hosiery Company has been established for the manufacture of full-fashioned hosiery.

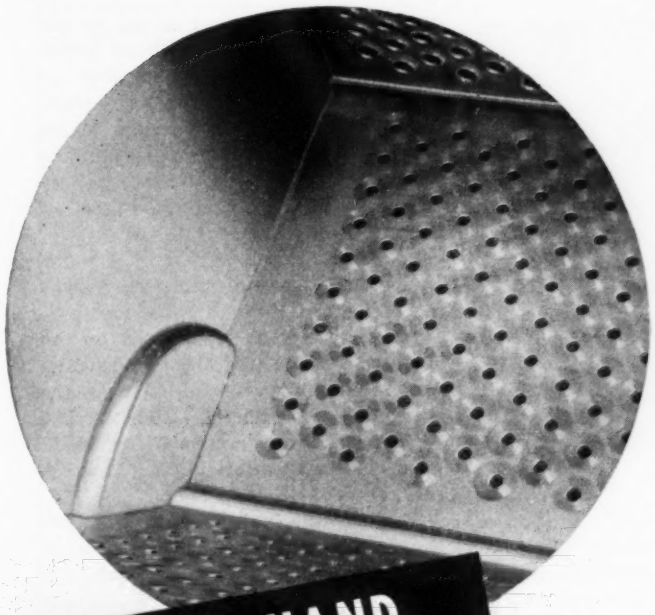
◆

New Finish for Full-Fashioned Stockings

A new finish for women's full-fashioned stockings called Perma-Sealed has been developed by Dexdale Hosiery Mils, Lansdale, Pa., which according to the company, results in a softer twist, improved feel, flatter stitches, less mussing and better welts. Terming it "The Stocking of Tomorrow," Bonwit Teller, New York, said in an advertisement, "Each thread is Permacoated, giving it unusual snag resistance." The stockings made on single-unit machines were priced at $1.15 per pair.

Hosiery Industry Uses 76.7 Per Cent of Silk Deliveries

Consumption of raw silk by the hosiery industry in March totaled 29,051 bales or 76.7 per cent of total deliveries to all American mills. For the first nine months of the current silk season consumption by the hosiery industry has constituted 65.8 per cent of total American mill deliveries compared with 72.7 per cent in 1937-1938.



YOUR HAND WILL TELL YOU WHAT HAND-HONING MEANS

Rochester Super Hosiery Dyeing Machines. Available from 25 to 300-lbs. capacity.

Feel the exclusive hand-honed interior of a Rochester Super-Hosiery Dyeing Machine, and you have ample proof of the gentleness with which it treats the sheerest hose.

No rough edges, burrs or snags are left to catch even the most delicate strand. Hosiery emerges from it as snag and chaff free as it entered—dyed thoroughly and evenly.

In addition to the hand-honed interior finish of the Monel Metal Cylinder, it is scientifically designed to insure maximum agitation with thorough penetration of the dye. For a minimum of seconds and rejects use a Rochester. Write for complete information.

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ROCHESTER ENGINEERING & CENTRIFUGAL DIVISION

American Laundry Machinery Co.

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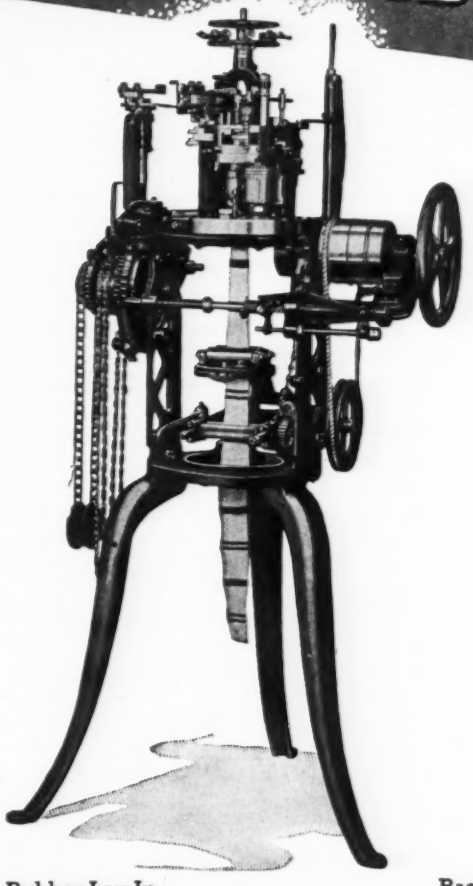
Brinton Ribbers



Rubber Lay-In
Picot Edge
3 & 4 Color Yarn Changes
Rack Welt
Mesh Designs
3 & 4 Feed Machines

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Let the new, modern Brinton Ribbers carry the burden of your production problems. Modernize your old ribbers, by converting to the latest styles. . . . For dependable, economical production—rely on Brintons.

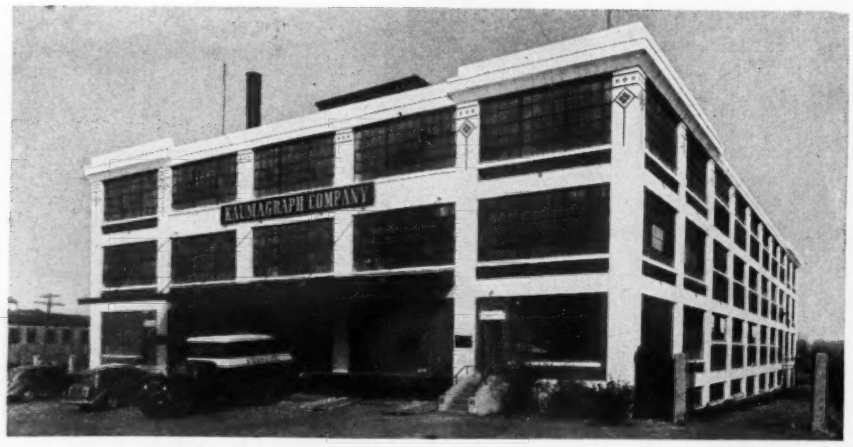
Full particulars on request

CIRCULAR KNITTING MACHINES

BRINTON

3700 KENSINGTON AVENUE

Philadelphia, Pa.



New home of Kaumagraph at Wilmington

Kaumagraph Moves Plant to Wilmington

Kaumagraph Company on May 15 moved its entire plant from New York City to new quarters in Wilmington, Del., without interruption of production. Coincidentally the new general sales offices of the company, at 16-22 East 34th St., New York City, were completely functioning. The task was achieved, without interference with production or service, as a result of careful, co-ordinated schedules covering the alteration of the new building in Wilmington for the company's purposes, and smoothly functioning schedules between the two plants. At no time was there a moment's cessation in production or shipping.

The company started 36 years ago, with the introduction of the Kaumagraph dry transfer. Laboratory research, merchandising studies of textile marking needs, and other activities, have since resulted in the complete service now supplied by the company, including, in addition to dry transfers, lithographed box wraps, labels and displays, embossed seals, and Prestomark, the newest development in identification devices.

The machinery for dry transfer manufacture was designed by the company. The embossed seal department and the lithographic department are equipped with the most modern machinery available. Prestomarks are a product of lithography.

The move of the plant to Wilmington came from a need for larger quarters strategically located as to shipping and other facilities. The general sales offices in New York, where George M. Porges, vice-president, will continue the sales direction of the company, are in constant communication with the Wilmington plant through direct telephone connection and teletype service. A complete art department and estimating service are maintained at the New York address, which is central to the metropolitan textile district. The district representation of Kaumagraph Company in Boston, Philadelphia, Chattanooga, Chicago, and Greensboro is maintained as before. The personnel of the company is unchanged. Trowbridge Marston, president, and T. H. Miller, secretary-treasurer, are located at the new general offices at the plant in Wilmington.

◆

High Speed Warp Knitting Machine

A high speed tricot warp knitting machine manufactured by Whitin Machine Works, Whitinsville, Mass., and sold by Jacquard Knitting Machine Company, Inc., "G" & Lycoming Sts., Philadelphia, Pa., was introduced to the trade at the recent Knitting Arts Exhibition. This machine is of the one- and two-bar type, and will operate at speeds as high as 500 r.p.m. with a 3 hp. motor. While the exhibition machine was 168 inches in width, producing a fabric of full width, it is being built in the 84 inch width, as well. It is capable of being utilized on knitted underwear and ladies dress goods in a wide field.

Among the mechanical features of the machine are the following: The required amount of yarn necessary to make the stitch desired is fed to the needles by means of a positive acting mechanism. The proper tension is maintained on the yarn by a self-adjusting micrometer screw unit which balances the yarn fed to the needles to maintain the tension desired. This produces an even stitch across the entire width of the cloth.

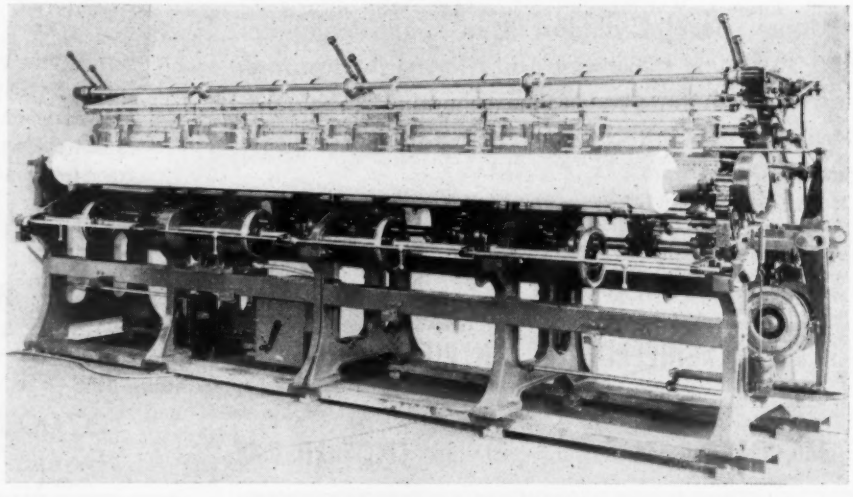
Take-up is accomplished by a roller clutch feed mechanism which selects the amount of cloth to be taken up. A constant tension is maintained on the cloth by means of an over-hanging weight, which properly balances the tension as the cloth roll builds up. The cloth beam has a capacity up to 12 inches diameter before doffing is necessary.

The machine is designed to take sectional warp beams. The yarn beam is capable of taking the newer and larger 14 inch diameter spools, as well as the smaller spools now commonly used. An improved beam connection makes it easy and simple to take the sections apart and put them together again. At the same time, this connection joins the sections solidly, without any possibility of their moving while the machine is in operation.

◆

Apex Suit Against Philadelphia Officials Begins

Arguments began May 15 at West Chester, Pa., in Apex Hosiery Co. damage suit against Philadelphia officials who are charged with not furnishing adequate protection to the Apex plant during the 1937 sit-down strike. Opening arguments were on a motion to eliminate Mayor S. Davis Wilson and former Sheriff William J. Hamilton as co-defendants. It was asked that all be eliminated except the County of Philadelphia and the court took the proposal under advisement. The case is being tried at West Chester because parties to the suit wished it held in impartial territory.



New high speed warp knitting machine

AS DIFFERENT AS

Black and White

IS THE DIFFERENCE IN HOSIERY THAT'S

Dura Bond

FINISHED!

More sales, more rapidly . . . more profits, more steadily . . . from hosiery more dull, sheerer looking, finer in texture, more resistant to snags and runs and spots. These are the differences in hosiery *DuraBond* Finished—the *extra value* that gives life to hosiery, lift to sales!

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Manufacturers of Textile Soaps, Softeners, Sulphonated Oils, Finishes—Collins and Westmoreland Sts., Philadelphia, Pa.—St. Catharines, Ontario, Canada

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COTTON RAYON WORSTED

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LIMERICK YARN MILLS
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BOSTON, NEW YORK, CHARLOTTE, PHILADELPHIA
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UNIVERSAL RIBBERS

Complete Dogless
With No Vibrating Parts
Interchangeable Heads from
2¾" to 4¾" and from 5" to 7"
One Piece Frame
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Stop Motions—
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Simple Construction
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Knitting—Braiding—Spooling
Pocket Creasing and Belt Loop Cutting Machines

TRENDS—THE YARN MARKETS

Further Advance Recorded in Silk with Strength Maintained—Cotton Yarns Stage Advance on Raw Cotton Squeeze Outside Government Holdings—Worsted Yarns Very Active and Stronger—Rayon Knitting Yarns Unchanged in Price with Fair Interest

Philadelphia, May 16, 1939

THE AMERICAN HOSIERY INDUSTRY, especially makers of women's full-fashioned, has been confidently expecting during recent weeks that silk would hit a peak and then a sizable reaction would develop at which time they could buy some more silk. This has not come; in fact further advances of about 20 cents have come this month with the peak now about $1.20 over the low of 1938. Although there is talk of speculation here and in Japan with a new crop due soon most of the trade has about given up hope of any serious decline; reaction may come but they do not expect it to go back to the old thought of $2.00. Cotton yarns have made the best showing this month this year in respect to gains in prices and this was at first due to the strength in the raw market but since has been helped by freer coverage. Indications are for cotton yarns to go up somewhat further in the coming weeks. Worsted yarns have been bought at a very active pace for fall knit wear at firmer prices. Rayon yarns are only fair but interest is picking up week by week at a gradual rate.

Cotton Yarns

During the last month raw cotton has advanced steadily so that it is up about ¾ cent from the low and in addition to this market authorities claim that at the present rate of consumption there will be a lack of supplies outside the Government's large holdings under the loan program. This makes for a very unusual situation and one that most spinners deplore but there seems little that can be done unless buyers are ready to meet price ideas above the spot markets. This condition in the raw market has been an impelling reason for the sudden reversal in cotton yarns. No boom has started and prices are slow to advance but the change in trend has come nevertheless.

The low point in yarns was touched late in April and since then the general average is up ½ cent and some to a cent although the latter has not been noted in larger sales. Carded yarns are up ½ cent in quotations and in some sales with the trend strongly away from the buyer but not so fast as to cause most of them undue concern. Another reason for the yarn about-face has been the fact that so many buyers have been postponing buying of yarns in view of the general feeling of uncertainty in all business particularly since the threat of war has been so noticeable. Some buyers in this category have had to cover if they were to make delivery on their goods at the specified time.

Mercerized yarns have been a feature of the market again this month. Shipments during the first four months have been about 40 per cent above those of the same time a year ago, there being little or no change in these yarns due to the war threat. Most mercerizing concerns are running full time on their present work-week and are not accumulating stock. One of the reasons for the activity in these qualities is that larger amounts are being used in men's underwear which type garments require a heavy poundage; another reason is that the demand from anklet manufacturers has been heavy and a third reason has been because quite a number of hosiery manufacturers are using more mercerized due to the high price of silk. Prices of mercerized yarns have not changed and are steady at the 63 cent basis for 60s two ply ungassed.

Silk

Silk has continued its remarkable advance of recent months by attaining new peaks for almost ten years and at the present time it is quoted approximately 20 cents a pound higher than a month ago. The present price is approximately 90 cents above that of early January. Although American full-fashioned hosiery manufacturers have been waiting patiently for a break in this market so that they could cover at a more attractive level there are few indications that this is going to develop in the near future. A number of well-informed operators in this commodity are now declaring that no serious decline can be expected in it during the next two to three months. Even in this connection they have revised upward their predictions as to how much of a decline will be experienced if and when it comes, many now feeling that $2.50 would represent all that could be expected.

The recent advance in silk has been in the face of April statistics which showed that mill deliveries amounted to 27,802 bales, a decline of about 10,000 bales from March and a drop of 5,500 bales from April a year ago. Weaving mills have already curtailed drastically in silk and many hosiery mills either have cut operations or are expected to do so shortly. Notwithstanding this decline in American consumption total visible stocks reached practically the lowest level since such records have been kept. Smaller American consumption has been offset by record takings in Japan. Hosiery manufacturers have been buying in a hand-to-mouth manner refusing to accept the idea that the present strength can be continued for any long period of time as they feel that full-fashioned mills will curtail drastically for the next couple of months and it is also expected that demand from the weaving trade will continue to decline as more mills turn to rayon.

Rayon

After experiencing a record first quarter, rayon yarns turned less active in April but have been somewhat improved so far in May. Producers of weaving yarns opened their books May 1 for July orders and those making knitting yarns for June, with prices continuing at unchanged levels. Producers report that there is an increasing demand for dull rayon yarns from hosiery manufacturers who are seeking these for use in welts and in other instances for the whole stocking. There has also been a demand for dull yarn to be used by the full-fashioned hosiery trade while producers of viscose type yarns are finding a much better response from the seamless hosiery trade. The high price of raw silk is also reflected in a better call for both acetate and viscose yarns from weavers of underwear cloth and it is expected that when peak production on fall underwear materials get under way a decidedly heavier poundage of rayon yarn will be bought by this trade than ever before.

Domestic yarn production for the first quarter totaled 81,200,000 pounds whereas the previous high record for any first quarter production was established in 1937 when 78,900,000 pounds of yarn were turned out by American rayon plants. One reason for this was the development of new cloths both in the underwear and dress goods field.

Worsted Yarns

There has been a very active demand for worsted knitting yarns this month and prices after hitting a low for the present year have during the last few days advanced several cents from this low. A majority of outerwear manufacturers have now covered a considerable amount of business for the fall season, paying in most contracts the low prices of the year to date. Coverage was brought about by a consensus that the lows were really here and that yarns were low compared with wool. The raw spot market has been strong and advancing while top futures are up about 3 cents so that many buyers of worsted yarns decided to cover. Spinners now have considerable poundage of business on their books but their new orders are not aiding them immediately because delivery on their new contracts is not to start for another month at least.

NEW 2¼ lb. cones evenly dyed in single packages for Knitters

HIGHEST QUALITY KNITTING YARNS
COMBED PEELER THREAD YARNS
Bleached
Colored Yarns
Yarns
SUPER CARDED YARNS
LOLA MILLS, INC. STANLEY, N.C.

KNITTING and WEAVING YARNS
12s to 45s SINGLE AND PLY
Package Dyeing
Cones or Tubes—also
PIONEERS IN BEAM DYEING
BLEACHED BOTTOM YARNS A SPECIALTY
LOLA MILLS, Inc.
STANLEY, N. C.

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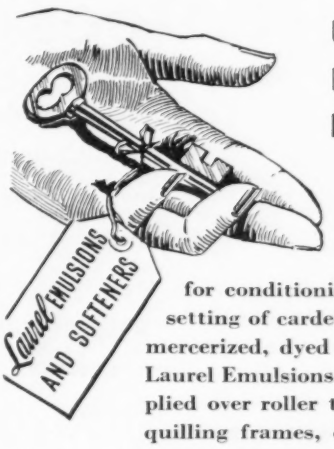

USE THIS KEY TO PROPER REGAIN AND EVEN RUNNING YARNS

Developed out of our 15 years' experience with spinners, converters, and knitters . . . for conditioning, softening and twist-setting of carded and combed grey yarns, mercerized, dyed and bleached yarns . . . Laurel Emulsions and Softeners, when applied over roller troughs on cone winders, quilling frames, or twisters, will produce even running yarns.

Let us suggest the right Laurel Emulsion or Softener for your purpose . . . and the best method of application. Shall we have our representative call?

Laurel SOAP MANUFACTURING CO., Inc.

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***Canvas* BASKETS AND TRUCKS**
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Shamrocks have many important features that add to their strength. Particularly important is their flexible, resilient spring steel frame and extra-heavy duck cover.

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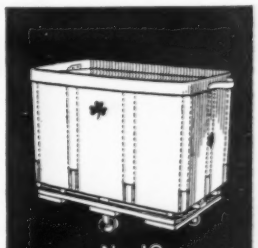
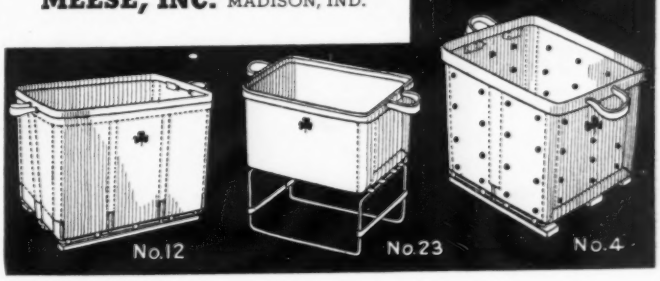
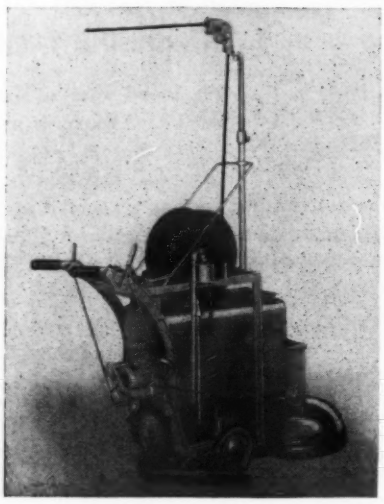




One Machine—
But It Does a Double Job



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Lawlor Model 20-C is a combination scrubber and water vacuum pick-up machine that cleans your floors cleaner—and at less cost because it does two jobs. This machine used with Selig products and an efficient floor maintenance schedule, which our experienced engineers will be glad to work out for you, will condition your floors economically and with less interruption to production. For consultation without obligation write, wire or phone.

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New Orleans Established 1895 Dallas, Texas

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"The Roving Frame"

by Fay H. Martin

Every carder, frame fixer, section man, and superintendent will find "The Roving Frame," by Fay H. Martin, an instructive pamphlet. Mr. Martin, who has long written articles for "Cotton," clearly interprets draft, twist, lay, tension, pressure of the presser, hyperbola curve, the winding of the bobbin, reverse twist on the roving frame, roving frame cones, tensions and compounds so that the student or practical man will profit by his explanations. This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Cotton," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin is a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. Price per copy $1.00 (or it may be secured in conjunction with a 3-year subscription to "Cotton" for $2.50 (Canada $4.00—Foreign $5.50).

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In the manufacture of *ring travelers* it must be a *precision operation* to secure the demanded quality and uniformity to meet the particular ring traveler requirements.

THE U. S. RING TRAVELER COMPANY obligates itself to see that you get this quality and uniformity by securely sealing all its containers.

Order Now! Samples Upon Request.

THE BOWEN SPECIAL TEMPER
ROUND AND SQUARE POINT
FLAT, OVAL AND ROUND WIRE
THE BOWEN VERTICAL STEEL
THE BOWEN VERTICAL BRONZE
THE BOWEN PATENTED BEVEL EDGE
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U. S. Ring Traveler Co.

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Why Risk Harsh Chemicals?

EXSIZE

Removes Starch Safely and Thoroughly by Gentle, NATURAL ACTION

● There's no need to risk harsh chemicals, because EXSIZE removes starch without danger to your cloth, whether cotton, rayon or mixed fibres. For perfect bleaching, printing and dyeing, fibres should be starch-free. EXSIZE will do that for you at minimum cost, by the gentle, *natural action* of its malt enzymes.

Our expert mill men, with the backing of our laboratory, will be glad to help you clear up your desizing problems. Write to:

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WAREHOUSES AT NEW YORK AND TEXTILE WAREHOUSE CO. GREENVILLE, S. C.

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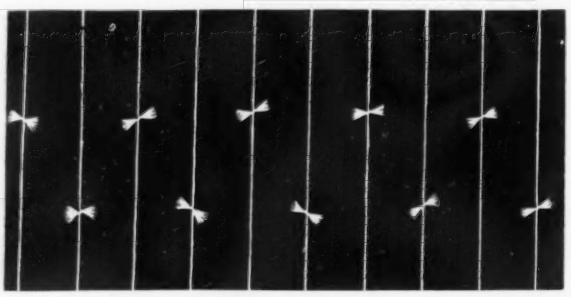
ABINGTON
PRODUCTS



'SHORT TAIL' WEAVER'S KNOTS
AUTOMATICALLY SCISSOR TRIMMED
CAN BE TIED ONLY WITH

ABINGTON KNOTTERS

Our knotter expert will be glad to demonstrate or install.

ABINGTON TEXTILE MACHINERY WORKS

ABINGTON, MASS. **B**OSTON, MASS. **C**HARLOTTE, N. C.

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Certified, Oil-Soluble, Salts-Free

FUGITIVE DYES

for TINTING Rayon, Acetate and other Synthetic Textile Fibres

TINTINOIL involves the control of three essential factors in RAYON MANUFACTURING by one simple application — MOISTURE, LUBRICATION, TINTING.

TINTINOIL is READY to USE. Any color. Shipped in light steel drums which serve for supply reservoir. You can have any color by the turn of a valve.

TINTINOIL PROCESS Mechanical Equipment can be synchronized with any cotton mill mixing or blending machine. Protected by U. S. PATENTS Nos. 1550396, 1618893, 1856450, 2006779, 2099146, 2115218.

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Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK

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We also manufacture tanks of other types for all purposes, as well as towers, standpipes, vats, boilers, etc. Let us know your needs in fabrication! *Write for "Tank Talk" No. 25-C.*

Tank Builders for Over 80 Years!

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WHENEVER PIPING IS INVOLVED

AUTOMATIC SPRINKLER SYSTEMS
CAST AND *Air Furnace* MALLEABLE IRON FITTINGS
PREFABRICATED PIPING
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THERMOLIER The Unit Heater with 14 Points of Superiority

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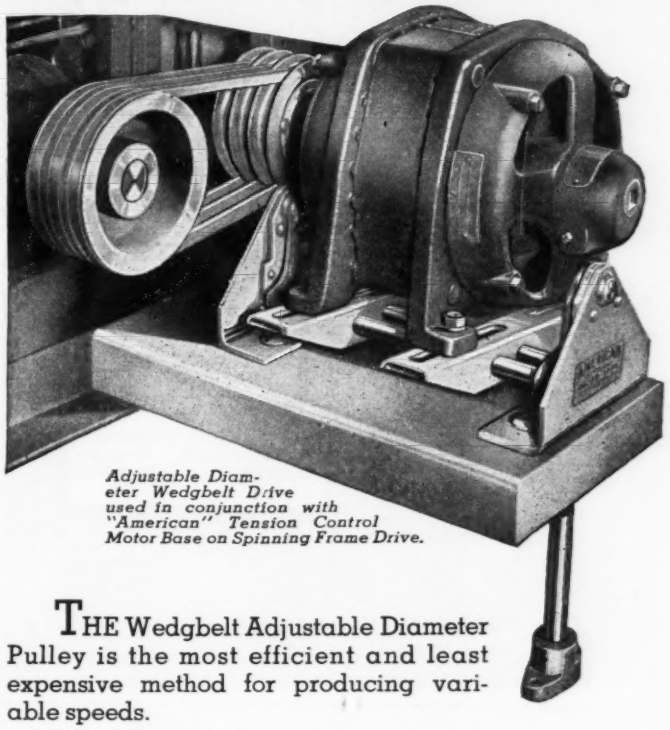
DE-SIZING
RAPIDASE
FOR COTTONS, RAYONS AND MIXED GOODS
WALLERSTEIN COMPANY, Inc.
180 Madison Ave., NEW YORK

AMERICAN
WEDGBELT
ADJUSTABLE DIAMETER PULLEYS



Adjustable Diameter Wedgbelt Drive used in conjunction with "American" Tension Control Motor Base on Spinning Frame Drive.

THE Wedgbelt Adjustable Diameter Pulley is the most efficient and least expensive method for producing variable speeds.

Any desired pitch diameter within a wide range is quickly obtained by merely turning an adjusting collar.

Belt alignment and position of the driven pulley *remain constant* at all adjustments—an advantage resulting from the distinctive "American" design.

If production operations in your mill require speed changes, one of these pulleys will accomplish the results quicker, cheaper and more effectively than a whole battery of individual pulleys.

Let us send you a catalog giving complete information on this newest addition to our complete line of Wedgbelt Pulleys and Drives. And, if you are not already familiar with the many advantages of the Tension Control Motor Base, ask for Catalog MB-38.

Adjustable Diameter Wedgbelt Pulley showing spanner wrench used for adjustments.

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PULLEY COMPANY
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DEPT. 5 . . . PHILADELPHIA, PA.

Regular Food Service for Greater EFFICIENCY

Ideal
FOOD CONVEYORS

● In mass production operations, regular food service on the job is an important factor in maintaining workers' efficiency. Both employers and employees benefit from increased production.

With Ideal food conveyors you can provide highly satisfactory periodic food distribution throughout the factory at minimum cost.

In the Ideal line is a wide range of available models designed to purvey either simple or elaborate offerings . . . from simple hamburgers, sandwiches, pastry, coffee, milk, candies, tobacco, etc. to a full cafeteria menu including also hot sandwiches, soups, stews and chilled desserts.

Ideal Conveyor Model No. C-877-C shown above is 62" high, 35½" wide and 56" long. It has a body of sturdy 18-gauge steel and a serving deck and drop shelf of stainless steel . . . plate glass in display section . . . glass wool insulation. Refrigeration compartment maintains temperature of 33°, the heated compartment 180°. In addition to 154 variations of standard models, Swartzbaugh also offers custom designed equipment.

THE SWARTZBAUGH MFG. CO.
TOLEDO, OHIO

Associate distributors: The Colson Corp., Elyria, O.; The Colson Equipment and Supply Co., Los Angeles, San Francisco; The Canadian Fairbanks-Morse Co., Canada.

Mail this coupon for a free copy of the interesting booklet "Human Beings at Work."

The Swartzbaugh Mfg. Co., Toledo, Ohio
Please send me free copy of "Human Beings at Work."

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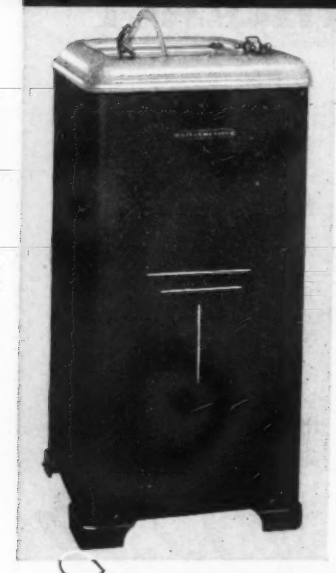
Give your workers plenty of cool water



plus

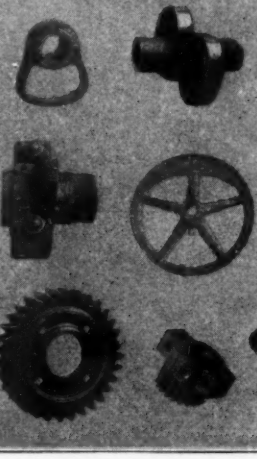
SANITATION

It isn't merely a question of a plentiful supply of cool water . . . it's a matter of providing an ever *sanitary* source of supply for the workers. Make sure of sanitation by using Halsey Taylor Cooler Fountains, the only coolers, whether electric or ice, with patented two-stream projector and automatic stream control.

The HALSEY W. TAYLOR CO., WARREN, OHIO

Halsey Taylor
COOLER FOUNTAINS

Henderson TEXTILE Repair Parts

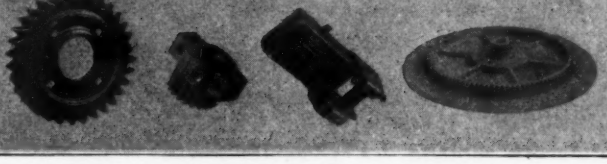


THEY last longer because they are reinforced at the places where ordinary parts break.

They fit more accurately and operate more smoothly at higher speeds because they are made from precision patterns by expert workmen.

Write today for prices.

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON, GEORGIA



This is the Age OF SPEEDS and LONG DRAFT SPINNING

Ring Travelers of greater stability are necessary. Wentworth Double Duty, Wentworth Gravity and Gravity Express meet these requirements.

Duplex Twister Travelers — Berylian Finish Steel Travelers for Silk and Rayon

NATIONAL RING TRAVELER CO.

PROVIDENCE, R. I. - CHARLOTTE, N. C.

SOUTHERN OFFICE—131 West First St.—Charlotte, N. C.—L. Everett Taylor, Southern Agent

Southern Representatives: H. B. Askew, P. O. Box 272, Atlanta, Ga.--Otto V. Pratt, Union Mills, N. C.--W. S. Johnstone, Charlotte, N. C.

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For Low Cost Automatic Cleaning

The MonoRail system of overhead handling eliminates storage and provides free movement of stock between processes. Our engineers will be glad to offer their assistance without obligation.

THE AMERICAN MONORAIL CO.
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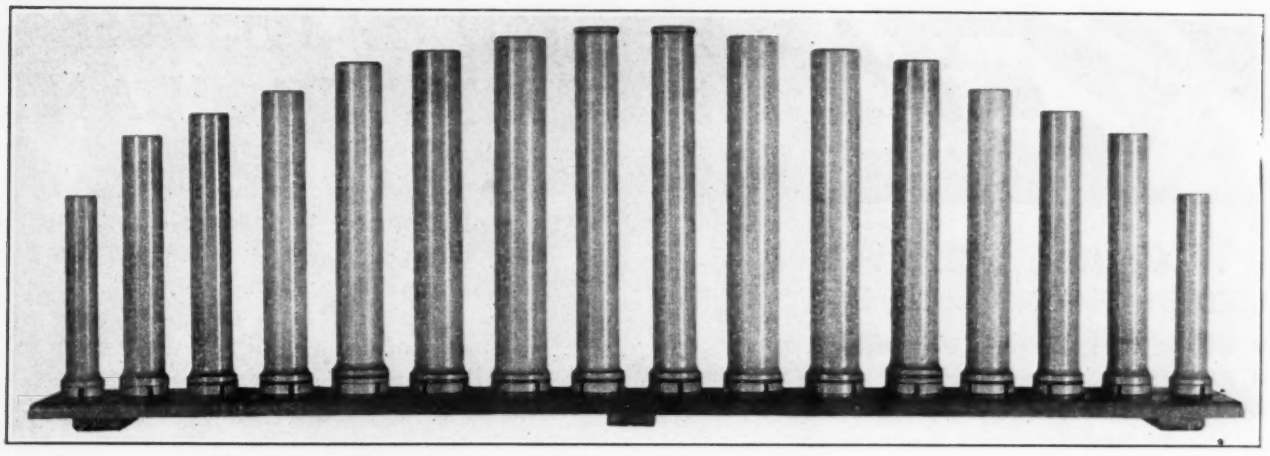
BARKLEY MACHINE WORKS

MANUFACTURERS OF

TEXTILE MACHINERY PARTS

GASTONIA, NORTH CAROLINA

TERMACO CARDROOM BOBBINS



Each Termaco bobbin is made to rigid specifications from highest quality Rock Maple stock, nicely finished outside and inside to protect roving and prevent collection of lint.

A Product of the South—for Southern Mills

Spools, Cones, Clearer Boards, Scavenger Rolls, etc.

SEND YOUR NEXT INQUIRY FOR

TEXTILE WOOD PARTS

to

The Terrell Machine Company, Inc.

Charlotte, North Carolina

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. ---- CEDAR RAPIDS, IOWA

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Jim

When you want accurate and dependable automatic temperature or humidity control for Air Conditioning systems or Industrial Processes call in a Powers engineer. With a very complete line of self-operating and compressed air operated controls we are well equipped to fill your requirements.

THE POWERS REGULATOR CO., 1032 Jefferson Standard Bldg., Greensboro, N. C. *Offices in 47 Cities*

48 Years of Temperature and ★ Humidity Control ★

POWERS

★ TEMPERATURE AND HUMIDITY CONTROL ★

Kali

TEXTILE SPECIALTIES
USED BY LEADING MILLS EVERYWHERE

- WOOL OILS, for wool, worsted and shoddy.
- RAYSPINOL, for cut rayon.
- PENETRATORS, for dyeing package, piece, skein and raw stock.
- SULPHONATED OILS of all types.
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- HYDROXY FINISHING OIL C-6, used in place of sulphonated olive with improved results and a saving.

Ask for full list of Kali Textile Chemicals

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MANUFACTURING CHEMISTS
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AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

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Specializing in Textile Costs and Operating Methods for More Than a Quarter of a Century

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
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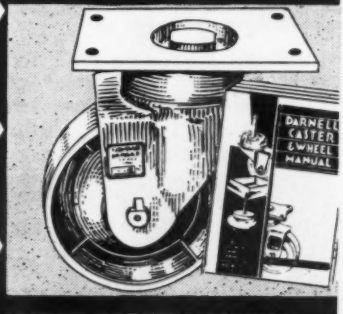
FALL RIVER, MASS. GREENVILLE, S. C.

Waterproof With
SCO-CO
Cottonseed Oil Gum Waterproofers
Caulking Compounds, Sealers, Roofing Materials
Paint and Protect With
SCO-CO Industrial Finishes
Village and Factory Paints
They Last Longer
Quotations, Recommendations, Estimates, Gladly Furnished without obligation.

Southport Paint Co., Inc.
Division of Wesson Oil & Snowdrift Sales Co., Inc., Savannah, Georgia

If you are interested in saving money on casters and wheels don't fail to investigate the Darnell line. Choice of the Textile Industry.

DARNELL CASTERS & WHEELS...



Built for Durability, Economy and Efficiency. Darnell Casters and Wheels will "Keep Turning and Earning." Demand Darnell!

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20 years without a drink—

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VICTOR MILL STARCH

"The Weavers' Friend"

Always Uniform

- Penetrates More Thoroughly
- Boils Thin
- Carries Weight Into the Fabric
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TEXTILE TANKS

SEVENTY YEARS' EXPERIENCE

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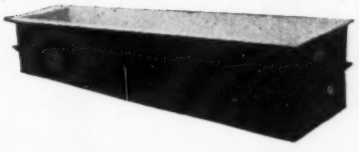
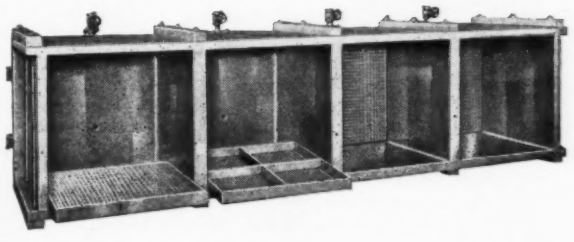


PLAIN OR LINED

SINGLE OR MULTIPLE COMPARTMENT

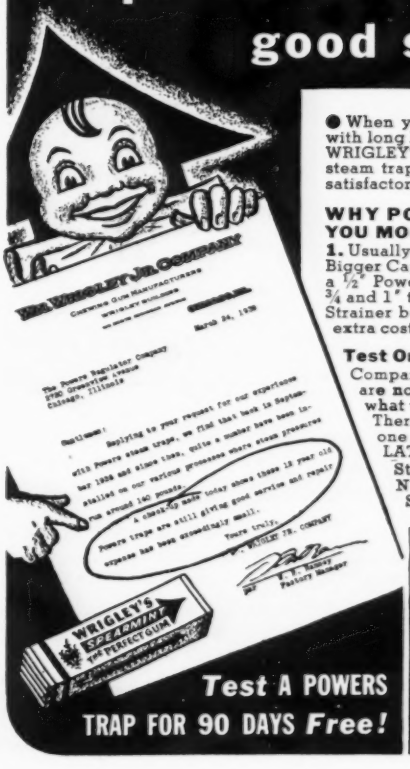


ANY SHAPE ANY SIZE

A HIGH CLASS PRODUCT IN EVERY INSTANCE

THE HAUSER STANDER TANK CO.
STA. W. CINCINNATI, O.

12 year old POWERS Traps are still giving good service!



● When you think of chewing gum with long lasting flavor you think of WRIGLEY'S — and when you want steam traps that give long years of satisfactory service think of Powers.

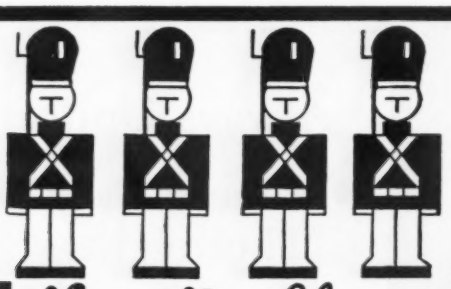
WHY POWERS TRAPS GIVE YOU MORE FOR YOUR MONEY

1. Usually outlasts other traps . . . **2.** Bigger Capacity — you can often use a ½" Powers trap in place of many ¾ and 1" traps of other makes . . . **3.** Strainer built right in the trap at no extra cost.

Test One FREE for 90 Days— Compare it with the best trap you are now using. If it doesn't do what we claim simply return it. There's no obligation. Order one now. THE POWERS REGULATOR CO., 1032 Jefferson Standard Bldg., Greensboro, N. C. Offices in 47 Cities. See your phone book.

37

Test A POWERS TRAP FOR 90 DAYS *Free!*



Uniformity *Always!*

—with Seyco Sizing
("SI-CO")

OTHER PRODUCTS
Softeners
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Shuttle Dressing
•
Penetrants
•
Alkalis

Constant uniformity in quality and performance is guaranteed in every shipment of Seyco Sizing.

Its absolute dependability in this respect has earned for Seyco Sizing such consumer acceptance that the plant in which it is produced is now the largest and most modern of any specializing in warp sizing.

Seyco Sizing is packed for convenience in tight, rust-proof, non-absorbing steel drums, which can be stored indefinitely.

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BASKETS
TRUCKS
SHIPPING HAMPERS

for

Cotton Mills, Woolen Mills,
Silk Mills, Hosiery Mills

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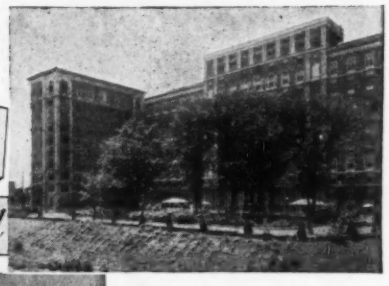
W. T. LANE & BROS., Inc.
Manufacturers **Poughkeepsie, N. Y.**

SUPREME

Without



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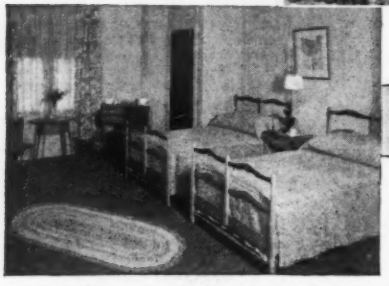

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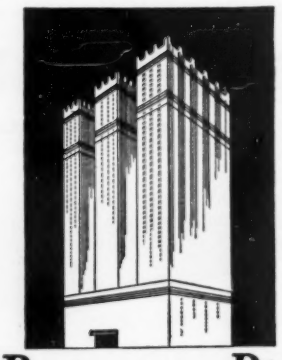
Living up to its famous name the Biltmore offers the finest in accommodation in Atlanta . . . all outside rooms, each with bath . . . courteous and efficient service . . . convenient parking . . . popular prices.

RATES FROM $3

ATLANTA BILTMORE

★ ★



For Business or Pleasure
IN NEW YORK

Whether you are coming to New York for business or for pleasure, the success of your trip will be enhanced by staying at the Vanderbilt, with its distinctive Park Avenue address. The luxurious rooms, the fine food and the superior service of this superb hotel have made it internationally famous.

SINGLE from $4, DOUBLE from $6, SUITES from $10

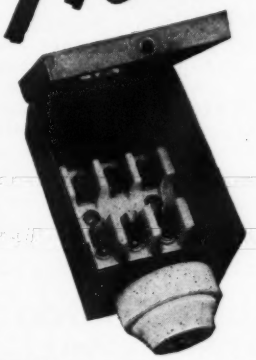
The VANDERBILT HOTEL
PARK AVENUE at 34th ST., NEW YORK

★ ★

How much

WECO ATLANTA

of YOUR PROFIT *is* WASTED *on* Motor Repairs?



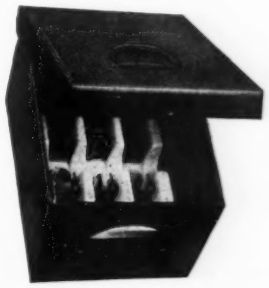
(Condulet receptacle for bottom plug-in convenience, shown in illustration above, can be supplied at slight additional cost.)

Most of this expenditure is needless. Why? Because the new Walker motor fuse box, at a nominal installation cost, eliminates burning out of your fractional horsepower motors once and for all!

Designed primarily to protect humidifier motors, this easily installed safeguard is complete with 3-pole midget fusebase and top knockout. Overload or insufficient oiling in your motors automatically cuts circuit, provided proper size midget fusetrons are placed in cutout base.

List Price, $2.25

Inquire at your nearest Walker jobber—or send for Catalog No. 6, Bulletin No. 4 for full details.



Cat. No. CO-103

WALKER ELECTRICAL CO.
ATLANTA, GEORGIA

BOSSON & LANE, INC.

Manufacturing Chemists

Established Jan. 1, 1895

Works and Office, Atlantic, Mass.

HIGH GRADE CASTOR OIL PRODUCTS

Sulphonated-Saponified

Soluble Oils **Para Soap Oil**

Turkey Red Oil **Castor Soap Oil**

Soluble Pine Oil **B & L Bleaching Oil**

PENETRANTS

BINDOL - ALPHASOL

Bleach Softener CSO,
Finishing Sizings and Softeners

VICTROLYN,

the economical assistant in warp sizing. Penetrating, Lubricating and Wholly Efficient.

B & L BLEACHERS' BLUINGS AND VIOLET TINTS

GOOD MONEY VALUES--FREEDOM FROM WORRY

Southern Representative:
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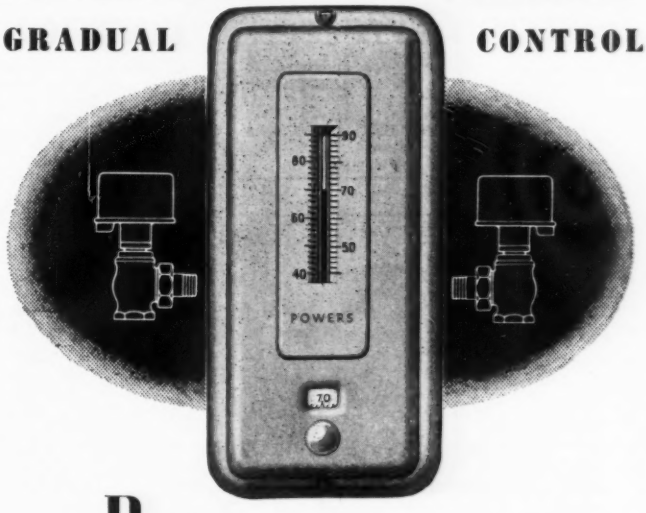
GRADUAL **CONTROL**



POWERS Vapor Disc Thermostats often give 15 to 25 years of dependable control without repairs of any kind. They need no annual overhauling or resetting. They do not get out of adjustment. Extremes of summer heat, sub-zero temperatures of winter, or building vibrations do not change their adjustment. *Fully described in Bulletin 200.* 86

THE POWERS REGULATOR COMPANY, 1032 Jefferson Standard Building GREENSBORO, N. C.—Offices in 47 Cities.

POWERS TEMPERATURE AND HUMIDITY + CONTROL +

CLASSIFIED ADS

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

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	Per Inch		Per Inch
1 inch	$5.00	13 inches	$4.20
3 inches	4.80	20 inches	4.00
6 inches	4.60	50 inches	3.80
10 inches	4.40	100 inches	3.00

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Advertisements set "want ad style." Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, for rent or wanted and professional cards are accepted at display rate only.

Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

FOR SALE

50—Whitin 40" Cards, 12" coilers, 27" doffers.
60—Deliveries Whitin Drawing, 4 del. heads, 12" coilers.
4—Woonsocket 11x5½ Slubbers, 68 spindles ea., 9" gauge, chain drive horsehead.
5—Woonsocket 11x5½ Slubbers, 60 spindles ea., 9" gauge, chain drive horsehead.
8—Woonsocket 10x5 Intermediates, 78 spindles ea., Whitin long draft installed 1934, chain drive horsehead.
2—Saco-Lowell 10x5 Intermediates, 78 spindles ea.
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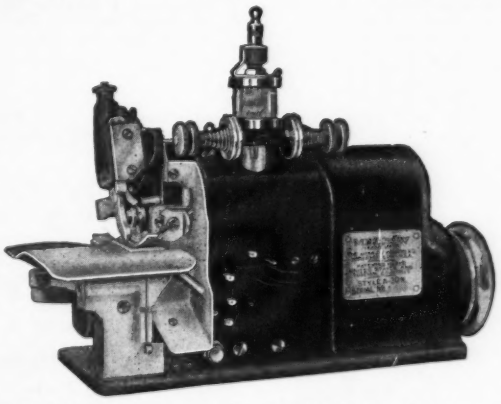

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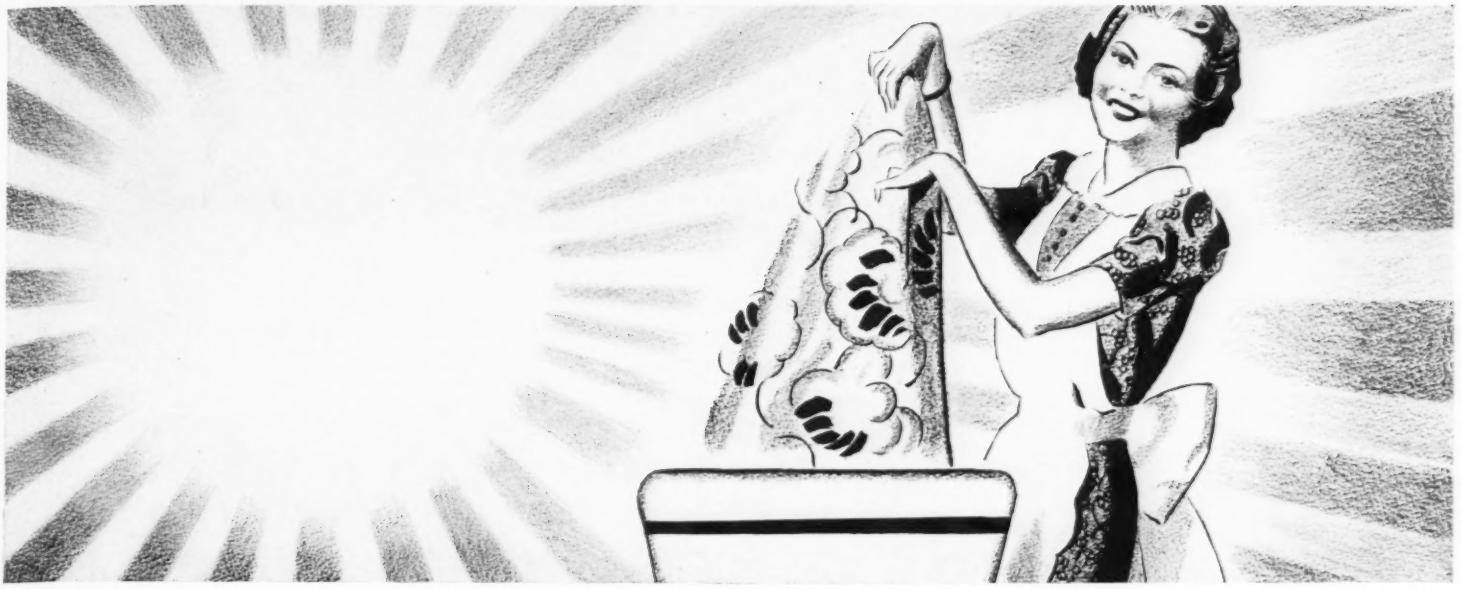

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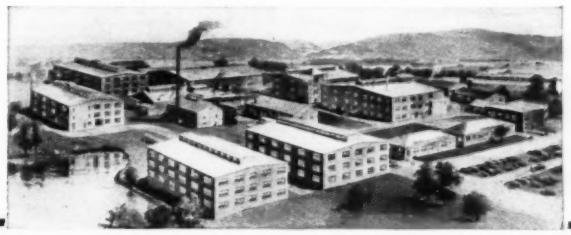

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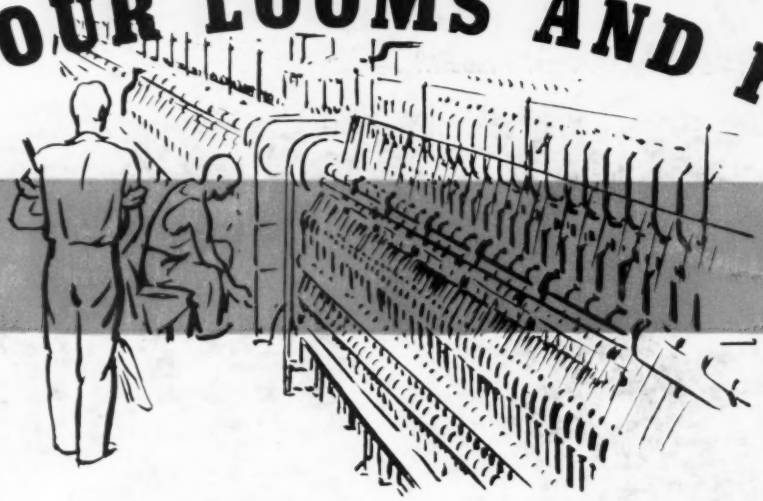

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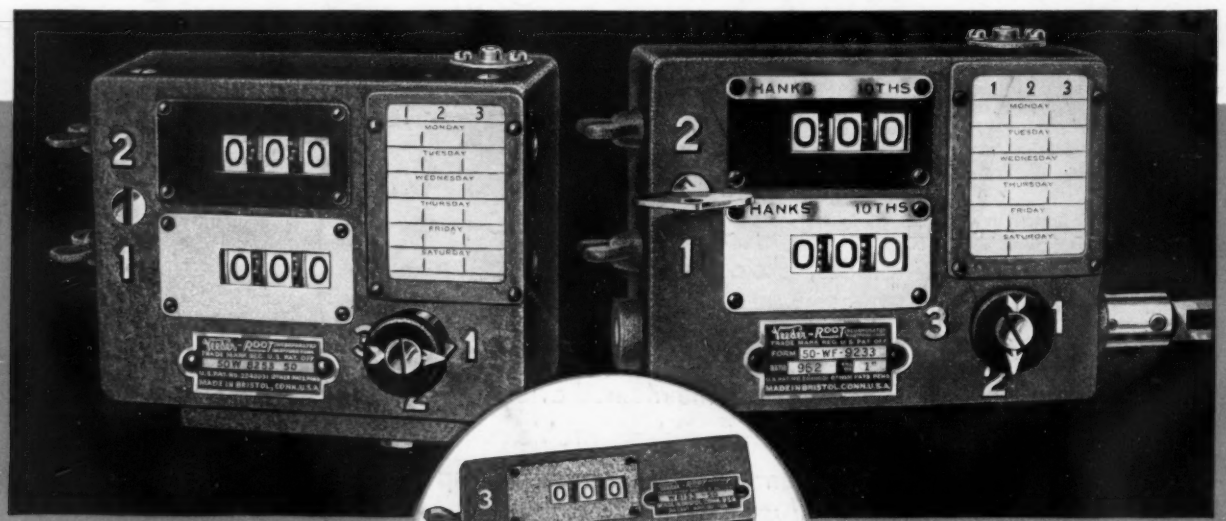

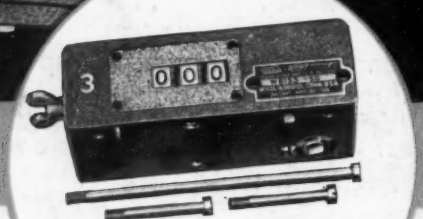

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